Scottish Birds

published by the
SCOTTISH ORNITHOLOGISTS' CLUB

VOLUME 41(4) DECEMBER 2021

Scottish Birds

Established in 1958.

Published quarterly by:
The Scottish Ornithologists' Club,
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East Lothian EH32 0PY.

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Designed and typeset by:
PicaDesign, 51 Charlton Crescent,
Aboyne, Aberdeenshire AB34 5GN.
Email: picades@ifb.co.uk

Printed by:
Swallowtail Print Limited,
Unit 2 Drayton Industrial Park,
Taverham Road, Drayton
Norwich, Norfolk NR8 6RL.

Front Cover:
Water Rail, Kirkcudbright, Dumfries & Galloway, November 2019.
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ISSN 0036-9144

Scottish Birds is the quarterly journal for SOC members, and is published in March, June, September and December annually.

Containing original papers relating to ornithology in Scotland, topical articles, bird observations, reports of rare and scarce bird sightings, alongside branch and Club-related news, our members tell us that *Scottish Birds* is one of the key benefits of belonging to the SOC. Its different sections have been developed to meet the wide needs of the birdwatching community, and the publication is renowned for its first-class photography.

An archive of the journal is available on the SOC website, where links can be found to other Club publications including the *Scottish Bird Report* online.

More about the SOC...

On the one hand, a birdwatching club. Established in 1936, the Scottish Ornithologists' Club (SOC) is Scotland's bird club with 15 branches around the country and a growing membership of over 3,000. Through a programme of talks, outings, conferences and other events, it brings together like-minded individuals with a passion for birds, nature and conservation.

On the other, a network of volunteers across Scotland, gathering vital, impartial information about our wild birds. The data we collect is made available to conservationists, planners and developers, and is used by organisations such as the RSPB, as one of the first points of reference in informed conservation planning.

Club Headquarters can be found at Waterston House, Aberlady, overlooking the scenic local nature reserve. Housed within, is the George Waterston Library, the largest ornithological library in Scotland, and the Donald Watson Gallery - one of the jewels in the Waterston House crown, exhibiting wildlife art all year-round.

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As well as receiving *Scottish Birds* every quarter, SOC members have access to a programme of talks and outings across Scotland and affiliation to a local branch of the Club. New members will receive a welcome pack on joining, plus a thank you gift if paying their subscription by direct debit.

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COP Reflections

Plate 211. Ian Bainbridge WeBS counting at Carrick shore, Fleet Estuary, Dumfries & Galloway, November 2021. © *Carole Bainbridge*

I'm sitting down to write this introduction to *Scottish Birds* during the weekend in the middle of COP26, and I think it's time to offer a few personal thoughts on what's been happening. The mainstream news this week has never featured the environment more heavily, which can only be good in terms of environmental awareness, and appreciation of the fact that we all rely on the natural world for our continued existence. And what of the COP so far? Glass half full - progress on agreements on net zero, coal, forest conservation and methane are all good, if governments follow through on their commitments. Also, it's really heartening to see the passion of young people for the environment they will inherit from this generation... Glass half empty - many of the major industrial nations are the slowest to join the agreements, and in my view, the timescales being proposed by some parties still do not match the urgency of the problems we're facing. The optimist in me hopes that by the end of next week we will have more deals and progress, but we cannot then forget the issues again; we all have to do what we can to reduce our footprints on the planet.

We also have a role to play in our birding activities. If we are going to assess the effects of measures to combat climate change and environmental degradation, we will do it through our monitoring of the environment around us. The long-term recording of birds in Britain has given us one of the best datasets in the world to use in assessing the effects of climate change, as shown in the newly-published report by our colleagues at the BTO[1]. Changes in bird distributions provide invaluable information: the spread of the Nuthatch or Little Egret, or changes in winter distributions of many wildfowl reflect changing climate. Changes in phenology: migrant arrival and departure dates, earlier breeding seasons, and changes in breeding success of species all reflect the changing conditions birds have to cope with in current circumstances.

Put this together, and the message has to be that the continuation of effective bird recording and monitoring will become ever more important in the coming years. The analogy of the canary in the coalmine has never been more appropriate. We can guarantee there will continue to be environmental change, and that birds will continue to respond to that; and we can contribute to understanding that change. On that note, I must put into 'BirdTrack' that Tree Sparrows have just appeared in the garden for the first time in our 11 years here in Galloway, and get ready to go out and do the monthly WeBS count - more Little Egrets I wonder?

It's also been great to see four species of thrushes feeding in the rowan we planted ten years ago, even in a small plot we've managed to get in 50 trees now, another minor contribution to address the most important problem facing us all.

Ian Bainbridge, SOC President

[1] Pearce-Higgins, J.W. (2021) Climate Change and the UK's Birds. British Trust for Ornithology Report, Thetford, Norfolk. Available to download in PDF format from the BTO website: **www.bto.org**

Amendments to the *Scottish List*: species and subspecies

THE SCOTTISH BIRDS RECORDS COMMITTEE

In 1993, the Council of The Scottish Ornithologists' Club (SOC) delegated to the Scottish Birds Records Committee (SBRC) responsibility for producing a *Scottish List* and publishing regular amendments. The list was first published in 1994 and SBRC appointed a Subcommittee to maintain it; the current members are Dave Clugston, Ron Forrester, Angus Hogg, Bob McGowan, Chris McInerny and Roger Riddington.

SBRC established several principles for the original version of the *Scottish List*, which are still followed. The British Ornithologists' Union (BOU) has maintained the official British List since 1883 and SBRC adopts its taxonomy, sequence, scientific and English names, and species categorization for the *Scottish List*.

The BOU Records Committee (BOURC) normally only adjudicates on the first British record for any bird taxon. Responsibility then lies with the British Birds Rarities Committee (BBRC) for acceptance of all subsequent records of rare species and subspecies in Britain. Similarly SBRC is responsible for acceptance of records of species and subspecies which fall outside the remit of BBRC, but which remain rare in a Scottish context. Decisions by BOURC, BBRC and SBRC automatically apply to the *Scottish List*.

The *Scottish List* was most recently published in full in 2011, with annual updates from 2013 to 2018 (cited in Forrester 2018), 2019 (Forrester 2019) and 2020 (Forrester 2020). Since then, there have been three publications that affect the *Scottish List*. BOURC has published its 52nd (BOU 2021) in which it adopted version 10.2 of the IOC *World Bird List*. BBRC produced its annual report covering 2019 (Holt *et al.* 2020) and a report affecting the status of shearwaters (Stoddart & Hudson 2021). SBRC has also published its annual report for 2019 SBRC (McInerny & McGowan 2021), though there were no Scottish List changes.

The current updated version of the *Scottish List* in Excel format can be found on the SOC website at: www.the-soc.org.uk/bird-recording/the-scottish-list/

Changes to the *Scottish List* after adoption of version 10.2 of the IOC *World Bird* List by BOURC

Subalpine Warbler *Sylvia cantillans* is now split, with a new genus name *Curruca* (see below) adopted:

Western Subalpine Warbler *Curruca iberiae*
The two taxa *iberiae* and *inornata,* previously treated as subspecies have been lumped to form this monotypic species. The first accepted Scottish record for this species is:

1924 **Isle of May** 2CY+ male, 30 May, shot (specimen at NMS, Edinburgh, NMS.Z 1925.35) (E.V. Baxter & L.J. Rintoul) (*Scottish Naturalist* 44: 126; *British Birds* 18: 302; Forrester *et al.* 2007; Baxter & Rintoul 1953; *British Birds* 107: 282–285; BOU 2014).

Eastern Subalpine Warbler *Curruca cantillans*
Two subspecies *cantillans* and *albistriata* have both been recorded in Scotland, although most records have not been determined at subspecies level.

1908 **Fair Isle** C. *c. albistriata* 2CY+ male, 6 May, shot (specimen at NMS, Edinburgh, NMS.Z 1908.94.17) (BOU 2014; Forrester *et al.*, 2007; *British Birds* 107: 282–297).
This becomes the first Scottish record for both the species and subspecies *C. c albistriata.*

2014 **Fair Isle** *C. c. cantillans* 2CY+ male, 8 May, (photographed, trapped, DNA analysis) (BOU 2017).
This becomes the first Scottish record of the nominate subspecies.

BBRC (*British Birds* 113: 587) indicated that a wholesale review of all previous Subalpine Warbler records will attempt to apply uniform criteria to all past records and allocate as many as possible to species level. Meanwhile both species now appear on the *Scottish List*, Western Subalpine Warbler with the status code V and Eastern Subalpine Warbler, with both subspecies allocated the status codes V.

The sequence of Sylviidae is revised with a change in genus from *Sylvia* to *Curruca* for most species:
Blackcap *Sylvia atricapilla*
Garden Warbler *Sylvia borin*
Barred Warbler *Curruca nisoria*
Lesser Whitethroat *Curruca curruca*
Western Orphean Warbler *Curruca hortensis*
Rüppell's Warbler *Curruca ruppeli*
Sardinian Warbler *Curruca melanocephala*
Western Subalpine Warbler *Curruca iberiae*
Moltoni's Subalpine Warbler *Curruca subalpina*
Eastern Subalpine Warbler *Curruca cantillans*
Whitethroat *Curruca communis*
Marmora's Warbler *Curruca sarda*
Dartford Warbler *Curruca undata*

The sequence of Rallidae is revised, with two species changing genus from *Porzana* to *Zapornia*:
Water Rail *Rallus aquaticus*
Corncrake *Crex crex*
Sora Rail *Porzana carolina*
Spotted Crake *Porzana porzana*
Moorhen *Gallinula chloropus*
Coot *Fulica atra*
American Coot *Fulica americana*
Allen's Gallinule *Porphyrio alleni*
Baillon's Crake *Zapornia pusilla*
Little Crake *Zapornia parva*

The sequence of Phalacrocoracidae is revised to:
Cormorant *Phalacrocorax carbo*
Shag *Phalacrocorax aristotelis*

The sequence of *Helopsaltes* and *Locustella* is revised to:
Pallas's Grasshopper Warbler *Helopsaltes certhiola*
Lanceolated Warbler *Locustella lanceolata*
River Warbler *Locustella fluviatilis*
Savi's Warbler *Locustella luscinioides*
Grasshopper Warbler *Locustella naevia*

The sequence of *Ficedula* is revised to:
Taiga Flycatcher *Ficedula albicilla*
Red-breasted Flycatcher *Ficedula parva*

Pied Flycatcher *Ficedula hypoleuca*
Collared Flycatcher *Ficedula albicollis*

The sequence of Passerellidae is revised to:
Dark-eyed Junco *Junco hyemalis*
White-crowned Sparrow *Zonotrichia leucophrys*
White-throated Sparrow *Zonotrichia albicollis*
Savannah Sparrow *Passerculus sandwichensis*
Song Sparrow *Melospiza melodia*

BBRC decisions which affect the *Scottish List* (Holt *et al.* 2020)

Falcated Duck *Mareca falcata*

2000 Orkney Shapinsay, 2CY+ male, 24 November, shot (specimen NMS, Edinburgh NMS.Z 2002.86), photo (I. Dillon, P. Hollinrake *et al.*) (*British Birds* 94: 501, 113: 589).
Following acceptance by BOURC of the first British record, an adult male recorded in Norfolk in 1986 (Stoddart & McInerny 2020), BBRC conducted a review of subsequent records. From this review a further six British records were found acceptable for Category A, with all other records moved to Category E. The only Scottish record that BBRC found to be acceptable for Category A is the above Orkney record.
Add species to *Scottish List*. Category A. Status code V. Monotypic.

Cliff Swallow *Petrochelidon pyrrhonota*

2019 Highland Milovaig Pier, Skye, 2CY+, 27 August, photo (E. Benninghaus, S. Langlois, A. Stables) (*British Birds* 113: 616, plate 369).
Subspecies undetermined, although the nominate is most likely.
Add species to *Scottish List*. Category A. Status code V.

Stejneger's Stonechat *Saxicola stejnegeri*

2019 **Shetland** Westing, Unst, 1CY male, 8–14 October, trapped, photo, DNA analysis (M. Golley *et al.*) (*British Birds* 113: 637, 114: 15).
Stejneger's Stonechat has recently been split from Siberian Stonechat *S. maurus* and the first two Scottish records, with identification confirmed by DNA analysis both came from Shetland in 2019. The Unst bird was recorded nine days ahead of the second, which was near Sandwick, Mainland.
Add species to *Scottish List*. Category A. Status code V. Monotypic.

BBRC decision which affects the *Scottish List* (Stoddart & Hudson 2021)

Audubon's/Barolo/Boyd's Shearwater *Puffinus lherminieri/baroli/boydi*

Whilst recent 'at sea' records have been treated as belonging to the above group of species, three 'older' records had remained on the *Scottish List* as referring to Barolo Shearwater. However, two of these records, 1974 Argyll and 1985 Dumfries & Galloway should also now be treated as belonging to the above species grouping. The only remaining Scottish record of Barolo Shearwater is the bird found dead at Musselburgh, Lothian on 9 December 1990 and held at NMS, Edinburgh (NMS.Z 1991.41) (*British Birds* 114: 9–10).

Scottish List category totals

As a result of the above changes the *Scottish List*, category totals are now:

Category A	529
Category B	6
Category C	9
Total	**544**
Category D	10

Acknowledgement

Chris McInerny and Bob McGowan made significant contributions to this paper.

The *Scottish List* - on SOC website

Due to the frequency of changes to the *Scottish List*, it is considered inappropriate to produce regular printed versions that quickly become out of date. The *Scottish List* in its current form, does however appear on the SOC website, in a convenient Excel format, where it is updated annually and can be downloaded. It is found at: www.the-soc.org.uk/bird-recording/the-scottish-list/

Records of species and subspecies recorded in Scotland on up to 20 occasions

Comprehensive lists of all records of species and subspecies recorded in Scotland on up to 20 occasions now appear on the SOC website in tabulated form (www.the-soc.org.uk/bird-recording/scottish-birds-records-committee-sbrc/records-of-species-and-subspecies-recorded-in-scotland-on-up-to-20-occasions). The lists are updated annually.

References

Baxter, E.V. & Rintoul, L.J. 1953. *The Birds of Scotland*. Oliver & Boyd, Edinburgh & London.

British Ornithologists' Union (BOU). 2014. Records Committee: 42nd Report (October 2013). *Ibis* 156: 236–242.

British Ornithologists' Union (BOU). 2017. Records Committee: 47th Report (October 2017). *Ibis* 159: 925–929.

Collinson, J.M., McGowan, R.Y. & Irestedt, M. on behalf of BOURC. 2014. First British records of 'Eastern' and 'Western' Subalpine Warblers. *British Birds* 107: 282–297.

British Ornithologists' Union (BOU). 2021. Records Committee: 52nd Report (January 2021). *Ibis* 163: 305–308.

Forrester, R.W. on behalf of Scottish List Subcommittee, Scottish Birds Records Committee. 2017. Amendments to the Scottish List: species and subspecies. *Scottish Birds* 378: 202–204.

Forrester, R.W. on behalf of Scottish List Subcommittee, Scottish Birds Records Committee. 2018. Amendments to the Scottish List: species and subspecies. *Scottish Birds* 38: 232–238.

Forrester, R.W. on behalf of Scottish List Subcommittee, Scottish Birds Records Committee. 2019. Amendments to the Scottish List: species and subspecies. *Scottish Birds* 39: 200–201.

Forrester, R.W. on behalf of Scottish List Subcommittee, Scottish Birds Records Committee. 2020. Amendments to the Scottish List: species and subspecies. *Scottish Birds* 40: 212–215.

Forrester, R.W., Andrews, I.J., McInerny, C.J., Murray, R.D., McGowan, R.Y., Zonfrillo, B., Betts, M.W., Jardine, D.C. & Grundy, D.S. (eds). 2007. *The Birds of Scotland*. The Scottish Ornithologists' Club, Aberlady.

Holt, C., French, P. and the Rarities Committee. 2020. Report on rare birds in Great Britain in 2019. *British Birds* 113: 585–655.

McInerny, C.J. & McGowan, R.Y. on behalf of the Scottish Birds Records Committee. 2021. Scottish Birds Records Committee report on rare birds in Scotland, 2019. *Scottish Birds* 41: 99–120.

Stoddart, A. & Hudson, N. 2021. BBRC and newly split species. *British Birds* 114: 8–17.

Stoddart, A. & McInerny C.J, on behalf of BOURC and BBRC. 2020. The Falcated Duck in Britain. *British Birds* 113: 46–53.

Ronald W. Forrester, Scottish List Subcommittee, Scottish Birds Records Committee, East Bank, Eastlands Road, Rothesay, Isle of Bute PA20 9JZ.
Email: ronandedith1@gmail.com

ms received May 2021

Where have the breeding waders gone? Changing distributions in habitats and fluctuating numbers of breeding waders in the Central Highlands of Scotland

N.E. BUXTON & K. DUNCAN

Introduction

Lapwing *Vanellus vanellus*, Oystercatcher *Haematopus ostralegus*, Redshank *Tringa totanus*, Snipe *Gallinago gallinago* and Curlew *Numenius arquata* are relatively numerous as wider countryside waders throughout much of the agricultural areas of the UK (Balmer *et al.* 2013). However, waders breeding on agricultural land have long shown complex population fluctuations across the UK (Harvie Brown 1906, Spencer 1953, Robinson & Sutherland 2002, Shrubb 2007, Newton 2017) and are currently recognised to be in decline. The mid-20th century has seen the largest and most extensive changes in agriculture for many decades with increasing use of large machinery and other technology resulting in rapidly intensified farming and associated countryside management practices (Gibbons *et al.* 1996, Wilson *et al.* 2004). Farming practices have continued to evolve into the early decades of the 21st century and, even though the influences are now well-recognised, much wildlife in the countryside is still in decline, very noticeably in the least intensively used Scottish upland farmland. Through the use of a small data set on wader chicks from Speyside, Deeside and Grampian in the Scottish Highlands, collected almost 50 years ago, compared to data collected in the early years of this century this paper illustrates some of those changes in terms of waders in the upland farmland of the Central Highlands of Scotland.

Study Area

The study area (Figure 1) lay in the Central and Eastern Highlands of Scotland, centred on the Grampian Mountains and two main river catchments; those of the Rivers Spey and Dee, both of which flow to the Scottish east coast. Upland farms, substantially based on livestock and barley, lined the catchments of both rivers. Only in the north-east of the study area in Grampian were the farms more lowland in type with a greater dependence upon arable land.

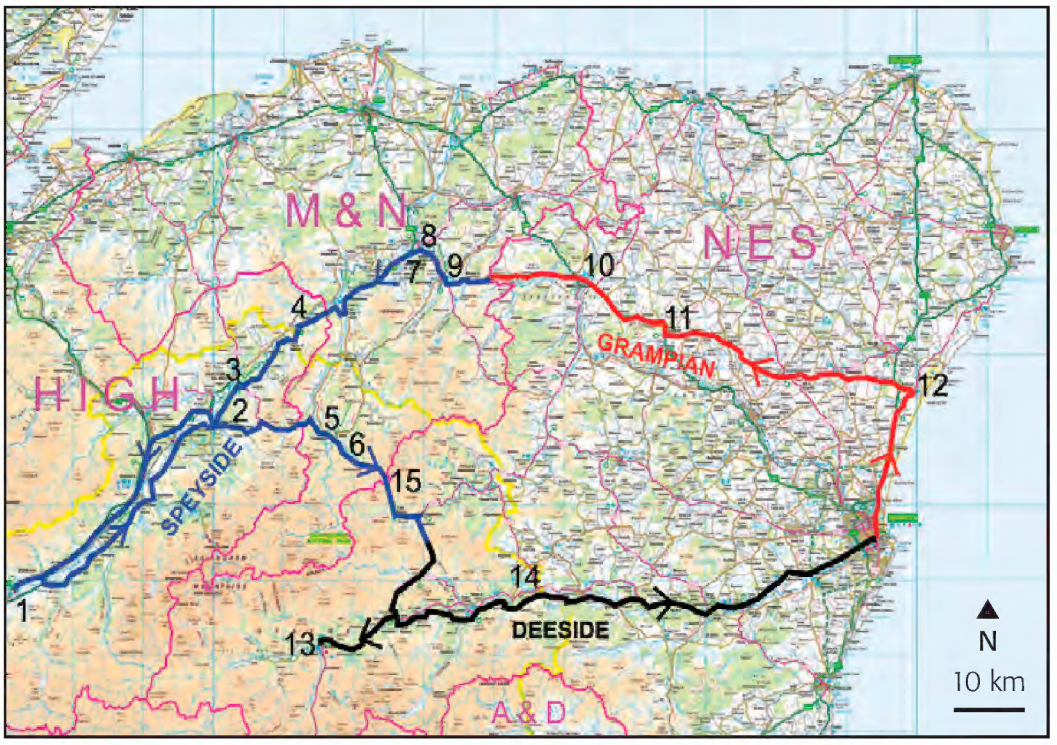

Figure 1. The location of the study area.

Methods

The study was based on a transect (Figure 1), covering approximately 220 miles, surveying both the numbers and distributions of four species of wader: Lapwing, Oystercatcher, Redshank and Curlew, whose main habitats were farmland.

Bird survey

1973–1974 The survey was carried out by car in early June 1973 and 1974 purely with the aim of ringing wader chicks, hence the available data are the chicks caught and ringed and the location. They are not a full record of all the chicks present, only those actually caught; thus these early data are a partial survey of birds present giving a minimal estimate of numbers.

2006–2008 Again the survey was carried out by car, in June alone in 2006 but on two occasions in each of the years of 2007 and 2008. In the latter two years, adult waders were also counted, the habitats used noted and their distribution mapped in late April or early May. Subsequently in early June, as in 1973 and 1974, birds were resurveyed; adults were once again counted and their distribution mapped and chicks were caught and ringed. However, all chicks seen, whether caught or not, were counted; hence these data are a full survey of both adults and chicks observed. Habitats used by both adults and chicks were noted.

2009–2019 A limited area of the original transect (Newtonmore to Well of the Lecht) was repeated annually in early June until 2019. Both adult waders and chicks were counted.

Habitat survey

The habitats available to the waders in the study area were initially surveyed in detail in April/May in both of the latter two years. Using the car odometer, the habitat on both sides of the road was recorded at one mile intervals and classified into twelve categories. During both the April/May and June transects the specific habitats where birds occurred were also recorded.

Results

The distribution of habitats in 2007 & 2008

Of the suitable habitats in the study area, grazed grassland (23.1%) and moorland (8.9%) were the most frequent (Table 1) and consistently so over the two years. Sheep-grazed fields were most frequent, albeit not always with the sheep currently present; cattle and horse-grazed pastures also contributed to the short grass habitat but were far less widely distributed. Cultivated fields, especially for cereals and grass crops, also comprised a significant proportion (13.4%) of the total.

Table 1. The relative frequency of habitats within the study area.

	Total counted 2007 & 08	
Habitat	Number of sample plots	Relative abundance of habitats (%)
Moorland	83	8.9
Ungrazed grassland	57	6.1
Grazed grass	143	15.3
Grazed grass with *Juncus*	10	1.1
Grazed grass + sheep	42	4.5
Grazed grass + cattle	16	1.7
Grazed grass+ horses	5	0.5
Marsh	11	1.2
Cereal/grass ley/silage	60	6.4
Other cultivation	65	7
Set aside/fallow	2	0.2
Unsuitable habitat	440	47.1
TOTAL	934	100

The abundance of individual habitats varied along the transect (Figure 2) according to farming and land management practices in the individual geographic areas. Heather moorland, along with grassland, was a co-dominant habitat in Strathspey and Deeside where sporting management was intermixed with hill farming. In contrast, whilst some heather moorland was still present in Grampian, the lower altitudes were dominated by cultivated habitats alongside grassland. Grazed ground was also present in

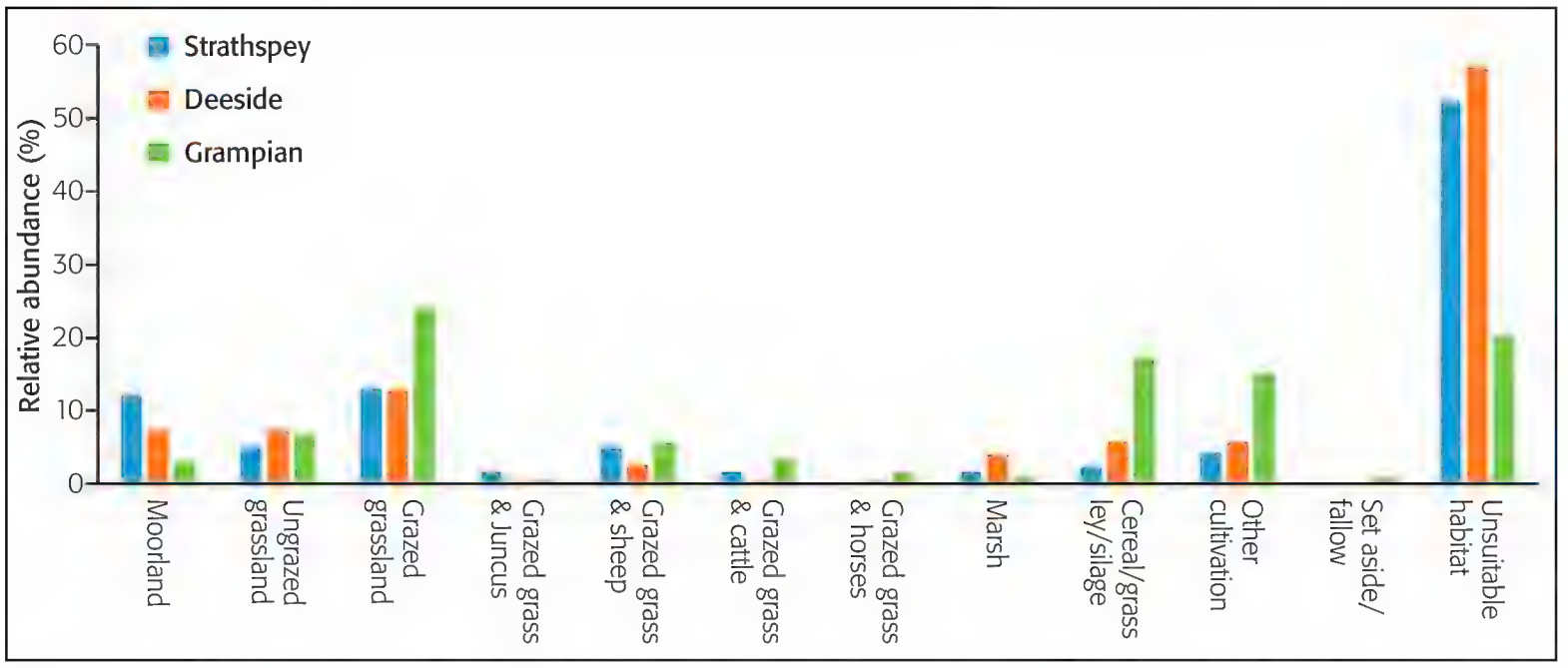

Figure 2. The frequency of habitats in three areas of the Central Highlands of Scotland; Strathspey, Deeside and Grampian.

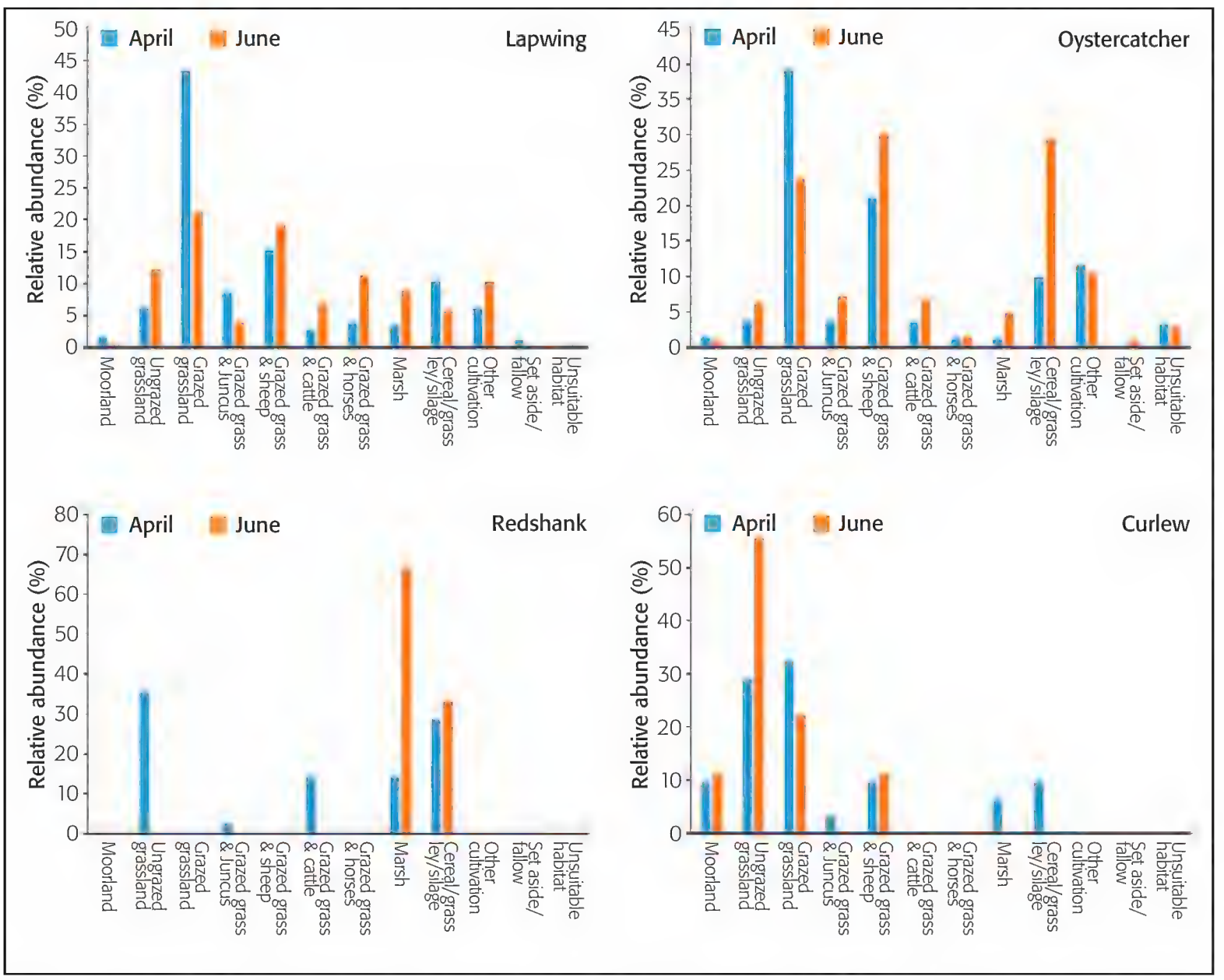

Figure 3. Habitat use by four species of adult waders in the Central Highlands of Scotland during the breeding season.

abundance in Grampian but in contrast to most of that in the upland areas it tended to be intensively managed. Ground generally unsuitable for breeding waders, such as woodlands and urban development, covered up to 47.1% of the terrain surveyed, with Deeside, especially the lower reaches and coastal approaches, being particularly unsuitable.

Table 2. The numbers of adult waders using grazed grassland habitat on the transect in two periods of the breeding season.

	April			June		
Species	Number of birds on grazed grassland	Total birds in all habitats	%	Number of birds on grazed grassland	Total birds in all habitats	%
Lapwing	275	373	73.7	139	224	62.1
Oystercatcher	235	342	68.7	145	210	69
Curlew	14	31	45.2	8	9	88.9

Distribution of full-grown birds through the breeding season (April & June 2007–08)

Along the whole transect early in the breeding season (Figure 3, Table 2) Lapwing and Oystercatchers were predominantly found on grazed grass (73.7% & 68.7% of birds respectively). In pasture simultaneously grazed by stock and used by waders, that grazed by sheep supported most birds (15.3% and 21.1% of Lapwing and Oystercatcher respectively). Horse and cattle-grazed pastures were far less frequent habitats (<2.0%) but, when they occurred, they tended to be vital islands of good habitat amongst extensive, otherwise less hospitable terrain used by 6.5% of Lapwing and 4.7% of Oystercatchers. Some use was made of arable areas but far less than grazed grass (<25.0% of both species); the exception being in Grampian (over 45.0% of both Lapwing and Oystercatchers). In contrast, the small numbers of Redshank present more commonly used the longer foliage habitats of ungrazed grass, pasture with rushes (*Juncus* sp.), cattle-poached ground and long vegetation on the edges of, and amongst, cultivated ground. However, so few were found that data were inadequate for further interpretation. Curlew were dependent upon moorland and ungrazed upland grasslands (38.7% of birds) to a greater extent although grazed grassland (45.4% of birds) along with arable ground and marsh were still significantly used, probably as feeding areas.

Later in the breeding season (Figure 3, Table 2) Lapwing were essentially still dependent upon grazed grassland (62.1% of birds) whilst the taller, ungrazed grassland became slightly more important, possibly as a refuge for the chicks. Oystercatchers too remained dependent upon grazed grassland (69.0% of birds) and also utilised ungrazed grassland slightly more frequently. The very

Table 3. The numbers of adult waders using grazed grassland or arable habitats in three areas of the transect in two periods of the breeding season.

		April					June				
Area	Species	Total birds in all habitats	Number of birds on grazed grassland	%	Number of birds on arable ground	%	Total birds in all habitats	Number of birds on grazed grassland	%	Number of birds on arable ground	%
Strathspey	Lapwing	264	222	84.1	22	8.3	179	122	68.2	13	7.3
	Oystercatcher	138	116	84.1	12	8.7	122	87	71.3	12	9.8
Deeside	Lapwing	62	43	69.4	8	12.9	25	15	60	6	24.0
	Oystercatcher	138	89	64.5	31	22.5	66	53	80.3	7	10.6
Grampian	Lapwing	47	10	21.3	32	68.1	20	2	10	17	85.0
	Oystercatcher	66	30	45.5	31	47.0	22	5	22.7	14	63.6

Table 4. The numbers of chicks ringed in the study area in the 1970s and counted in the early 21st century.

	Number of each species				Mean of each species			
Year	Lapwing	Oystercatcher	Redshank	Curlew	Lapwing	Oystercatcher	Redshank	Curlew
1972	88	10	0	6	77.5	7.5	2.5	4
1973	67	5	5	2				
2006	34	8	0	2				
2007	31	7	0	6	29.7	5.7	0	2.7
2008	24	2	0	0				

small numbers of Redshank became totally dependent upon long vegetation in growing crops and marshes. Although some Curlew fed in stocked grassland, the moorlands and ungrazed grasslands remained the most important breeding habitats.

In both Strathspey and Deeside (Table 3), grazed grassland remained the most important habitat (>60% of birds) for Lapwing and Oystercatcher throughout April and June. For both species arable ground was of increased importance in Deeside compared to Strathspey. However, in Grampian where arable was more abundant and grazed grassland less frequent, both species were far more dependent upon arable than grazed ground. Redshank were absent and Curlew extremely scarce.

The numbers and distribution of chicks

Five species of wader chicks were caught in the 1970s but only three 30 years later. In 1973–74 Lapwing were the most numerous chicks caught (Table 4), followed by Oystercatchers. Although generally distributed along much of the transect, both species were concentrated on the upland farms of Speyside around Grantown on Spey, Tomintoul, Dufftown and Huntly with the Braemar area of Deeside also important (Figure 4). By 2006–08 chicks of the two species were far less numerous throughout the study area, most noticeably those of Lapwing; with a small sample size, only the decrease of this latter species was significant ($r=0.9609$, $P<0.01$). Whilst Lapwing chicks are still locally common at Tomintoul, the lower altitude farms along the River Spey at Newtonmore and Nethybridge supported relatively more Lapwing chicks compared to the areas important in earlier years. In the later years, Braemar supported comparatively few Lapwing chicks and Grampian was virtually devoid of waders. When chicks occurred they were concentrated in specific individual, or clumps of, fields and were consistently present between years. Between 2006–2016 the numbers of chicks seen in individual zones along the transect were positively correlated

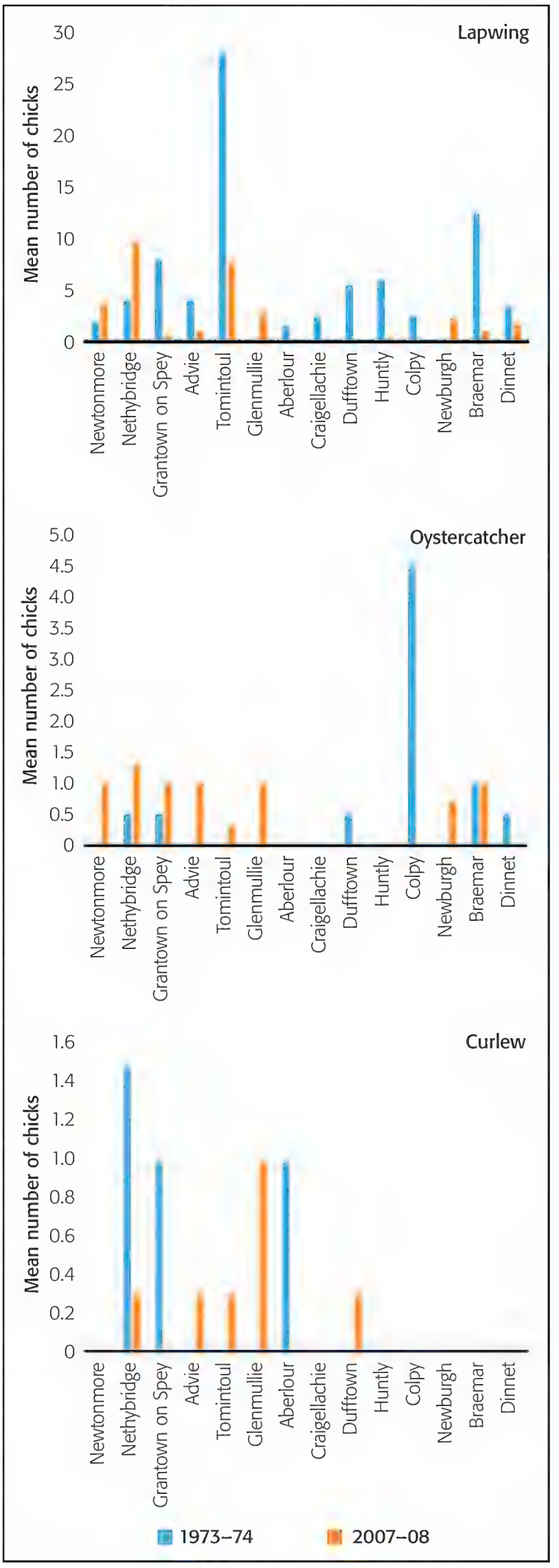

Figure 4. The mean numbers of chicks (Lapwing, Oystercatcher & Curlew) caught in 1973–1974 or seen in 2006–2008 per year in the study area.

with the numbers of adults present (r=0.978, P< 0.001) and over the period 2007–2019 there was also a positive, but non-significant trend, for more chicks to be seen when adults were more numerous. Many Oystercatcher nests throughout the study area, but predominantly in Deeside and Grampian, were still to hatch in June.

Discussion

There were three main findings in this study. Firstly, in the central Scottish Highlands all wader species decreased over a 30-year period; numbers of Lapwing chicks fell by more than 50%. Whilst such a decrease could be due to either reduced wader populations or reduced chick production, limited contemporary data from the later years suggest that chick numbers were an indicator of adult, and therefore overall population, numbers. Hence it is suggested that the lower numbers of chicks in the latter period is due to reduced wader populations. Secondly, reduction in numbers was not restricted to a single location but occurred across a broad swathe of countryside to such an extent that the intensively arable areas of Grampian were virtually waderless. Thirdly, whilst no specific habitat data were available from the 1970s, the contemporary habitat data emphasized the importance of grazed grassland, both for adult waders and chick production. Whilst the most widespread and numerous stock in the 21st century were sheep, where they occurred both cattle and especially horses also had a positive influence on wader numbers and it may be that reduction in cattle numbers is a significant factor.

Reduction in wader numbers has not just occurred on the higher farms in the Central Highlands but also on the lower arable areas (French *et al.* 2000) and throughout Scotland and the rest of the UK (Taylor & Grant 2004). Shrubb (2007) discusses reduction in Lapwing number at length but the threat to other meadow birds, such as Redshank and Curlew, is now recognised (Eaton *et al.* 2015, SNH 2018).

Whilst habitat change is to the fore, research over many years has shown numerous complex and potentially subtle factors are influences in the changes (Jenkins *et al.* 2008, Holland *et al.* 2011, Taylor *et al.* 2012, RSPB 2012). It is unfortunate that no equivalent habitat data are available for the 1970s as those from the 2000s showed there were clear differences between the three sections of the study area, and most substantially between Grampian and the other two areas. Grampian supported far more intensive cultivation and far less moorland. Taylor and Grant (*loc. cit.*) noted that the decline of both unimproved grassland, often associated with drainage, and arable was associated with the decrease in Lapwing numbers in the Southern Uplands. In the Highlands strong links between contemporary bird distribution and habitats suggest that habitats must have been distributed differently in the 1970s, probably with a greater number of viable hill farms giving greater and more widespread stock numbers and, consequently, access to abundant grazed grassland. These changes are integrally associated with both contemporary cultural changes, including modern farming pressures and incentives (Shrubb 2003), and current climatic constraints (Jenkins *et al.* 2008).

Agricultural statistics (Scottish Government 2018) show that, within Scottish farming, there has been substantial change in cropping and livestock holdings, especially in the uplands in the last few decades. The demography of the human population in the Scottish uplands, previously largely farming-based, has changed and is continuing to change. The number of farm units has fallen, use of technology and machinery (rather than people) has increased in number, size and type whilst livestock has decreased, all with an associated change in management practices, such as times of cultivation and cropping. For instance there has been a significant change to autumn sown cereals giving earlier germination, growth and increased tillering, ultimately with an increased sward height and density during spring and early summer. Additionally, the widespread move to increased silage and haylage-making in the Highlands has resulted in a change in grass sward structure and earlier cutting; both of which bring problems for breeding

waders (Vickery *et al.* 2001, Beintema & Müskens 1987). Grass for silage is typically flattened with a heavy roller in early summer; during this study one field was rolled less than an hour after chicks were ringed in it (*pers. obs.*). Baines (1988,1989,1990) has shown that losses of clutches on improved ground are greater than on unimproved ground, possibly through loss of sward heterogeneity and thereby increasing the ease of predation (Whittingham & Evans 2004) and agri-improvement is accompanied by a decrease in the mean size of arthropods (Blake *et al.* 1994) resulting in lowered chick feeding profitability (Beintema *et al.* 1991). It has also been suggested that once populations of Lapwing are reduced by habitat changes then predation risk increases due to reduction in communal defence (Seymour *et al.* 2003).

Other factors which have been prominent in Highland farmland during the latter years of the 20th century are field drainage giving improved growth but with less damp ground and earlier drying of soil and reduced lime application resulting in lowered fertility and changed invertebrate fauna. Reduction in hill farm units (Scottish Agricultural College 2009, 2011) has meant land management has had to adapt, resulting in decreased grazing overall but more importantly, with increased sheep and (relatively) less cattle and horses, the nature of that grazing has changed. The overall outcome is a changed nesting sward generally giving less protection from predation to both nests and chicks (Baines 1988, 1989, 1990).

There are differences between the wader species. Lapwings particularly prefer short grazed grass generally up to the moorland edge but such grazed areas are now relatively few and local. As long ago as the early 1950s, Spencer (1953) noted Lapwings, whilst retaining some dependence upon grazed ground, may use arable ground which then brings additional risks from the cultivation practices. The present study probably highlights such risks in that Lapwing chicks were largely found on grazed ground. Thus although livestock are very important for maintaining habitat for all species, in contrast to Lapwing, Oystercatchers are more capable of nesting on arable ground, albeit delaying chick production, with many still on nests in early June. Baines (*loc. cit*,) suggested that they benefited from agricultural improvement more than other waders. Further work is needed to investigate this in these Highland farms; certainly this late breeding, especially in arable fields, may involve replacement clutches for those lost to farming practices (Spencer 1953, Shrubb 2007). Lapwing can lay replacement clutches but these, often due to weather, tend to be much earlier in the season. Whilst laying late replacement clutches in the Highlands compared to other species may be relatively frequent for Oystercatchers, the fundamental question still is whether these late birds are effectively productive and able to influence population levels?

Jefferson & Grice (1998) suggested that, at less than 200 m altitude, conversion of lowland wet grassland to arable has reduced the area of grassland available to breeding waders during the last century. This would certainly seem to be the situation in Grampian since the 1970s. However, Wilson *et al.* (2005) argued that there has been little further loss of grassland since the 1980s whilst wader populations have continued to decline. If that is the case, then clearly other factors, possibly even linked to the longevity of the individual species themselves, in addition to availability of grassland, are influential.

Whilst generally occurring across the whole of Great Britain, these changes have not necessarily occurred simultaneously in all areas. In the highly intensive arable English countryside these changes have been recognised since the push for increased agricultural productivity of WW2 and the technological leaps of the 1950s and 60s (Shrubb 2003, Newton 2017). However, change has been slower in the Highlands with good numbers of waders maintained into the late 1970s. Locally in the Badenoch area of Strathspey both Lapwing and Oystercatchers maintained high numbers until the late 1990s (*pers. obs.*); it is over the subsequent period that their numbers have become substantially reduced or totally absent.

All species in this study are summer migrants to the Highlands. In migrant species it is often difficult to determine whether population changes are effected on the wintering grounds, breeding areas or even on migration. Whatever the causes of earlier population fluctuations, the important effects of recent changes in agriculture practices, especially of grazing livestock, on breeding wader numbers, in the Highlands are clear. Whilst the importance of livestock is paramount, maintenance of the finely-balanced financial future of upland agriculture means there is unlikely to be an easy way to increase breeding wader populations in the current upland farming situation. Further focussed research to clarify these complexities will be essential. Decreasing wader numbers may have come later to the Scottish Highlands than further south, especially in England, but undoubtedly waders breeding in much of the Highlands are now under considerable and continuing pressure.

Acknowledgements

Our thanks are due to the Scottish Ornithologists Club which gave financial assistance to facilitate the early repeat surveys. Thanks must also go to Dr R. W. Summers who retained the original 1970s data for over 30 years, was instrumental in proposing the comparative work and was a partner in much of the early fieldwork. Ms M. de la Torres and Ms J. Johnson gave helpful advice on Scottish agricultural statistics. Thanks are also due to Prof J. Wilson (RSPB), Prof D. Thompson (SNH), Prof K. Park, Ms E. Sheard (Stirling University) and Ms Karen Sutcliffe (RSPB) for helpful discussions on Highland waders and who made critical comments on early drafts of this paper. Thanks are also due to an anonymous referee who made very useful comments on the final draft of this paper.

References

Baines, D. 1988. The effects of improvement of upland, marginal grasslands on the distribution and density of breeding wading birds (Charadriiformes) in northern England. *Biological Conservation* 45(3): 221–236.

Baines, D. 1989. The effects of improvement of upland, marginal grasslands on the breeding success of Lapwings *Vanellus vanellus* and other waders. *Ibis* 131(4): 497–506.

Baines, D. 1990. The roles of predation, food and agricultural practice in determining the breeding success of the Lapwing *Vanellus vanellus* on upland grasslands. *Journal of Animal Ecology* 59: 915–929.

Balmer, D., Gillings, S., Caffrey, B., Swann, R., Downey. I. & Fuller, R. 2013. *Bird Atlas 2007–11: The Breeding and Wintering Birds of Britain and Ireland.* British Trust for Ornithology.

Beintema, A.J., Thissen, J.B., Tensen, D. & Visser G.H. 1991. Feeding ecology of charadriiform chicks in agricultural grassland. *Ardea* 79: 181–192.

Beintema, A.J. & Muskens, G.J.D.M. 1987. Nesting Success of Birds Breeding in Dutch Agricultural Grasslands. *Journal of Applied Ecology* 24(3) 743–758.

Blake, S., Foster, G.N., Eyre, M.D. & Luff, M.L. 1994. Effects of habitat type and grassland management practices on the body size and distribution of carabid beetles. *Pedobiologia* 38: 502–512.

Eaton, M., Aebischer, N. Brown, A., Hearn, R., Lock, L., Musgrove, A., Noble, D., Stroud, D., & Gregory, R. 2015. Birds of Conservation Concern 4: the population status of birds in the UK, Channel Islands and Isle of Man. *British Birds* (108): 708–746.

French, P., Insley, H., Siriwardena, G. & Buxton, N. 2000. The breeding success of a population of Lapwings in part of Strathspey 1996–1998. *Scottish Birds* 21: 98–108.

Gibbons, D.W., Avery, M. & Brown, A.F. 1996. Population trends of breeding birds in the United Kingdom since 1800. *British Birds* (89): 291–305.

Harvie-Brown, J.A. 1906. *A Fauna of the Tay Basin and Strathmore.*

Holland, J.P., Morgan-Davies, C., Waterhouse, T., Thompson, S., Midgley, A. & Barnes, A. 2011. *An Analysis of the Impact on the Natural Heritage of the Decline in Hill Farming in Scotland.* Scottish Natural Heritage Commissioned Report No. 454.

Jefferson, R.G. & Grice, P.V. 1998. The conservation of lowland wet grassland in England. In Joyce, C.B. & Wade, P.M. (eds) European Wet Grasslands: Biodiversity, Management and Restoration: 31–48. Chichester: Wiley.

Jenkins, G.J., Perry, M.C. & Prior, M.J. 2008. *The climate of the United Kingdom and recent trends*. Met Office Hadley Centre, Exeter, UK.

Newton, I. 2017. *Farming and Birds*. Collins. London.

Robinson, R.A. & Sutherland, W.J. 2002. Post-war changes in arable farming and biodiversity in Great Britain. *Journal of Applied Ecology*. 39(1): 157–176.

Royal Society for the Protection of Birds. 2012. *Changing livestock numbers in the UK Less Favoured Areas - an analysis of likely biodiversity implications*. Unpublished report to RSPB by Cumulus Consultants Ltd.

Scottish Agricultural College. 2009. *Farming's retreat from the hills*. Report for the Scottish Government.

Scottish Agricultural College. 2011. *Response from the hills: Business as usual or a turning point?* Report from the SAC Rural Policy Centre.

Scottish Government. 2018. https://www2.gov.scot/Topics/Statistics/Browse/Agriculture-Fisheries/Publications/histagstats https://www2.gov.scot/Topics/Statistics/Browse/Agriculture-Fisheries/PubEconomicReport https://www2.gov.scot/Resource/0044/00441528.pdf

Scottish Natural Heritage. 2018. https://www.nature.scot/information-library-data-and-research/official-statistics/official-statistics-terrestrial-breeding-birds

Seymour, A.S., Harris, S., Ralston, C. & White, P.C.L. 2003. Factors influencing the nesting success of Lapwings *Vanellus vanellus* and behaviour of Red Fox *Vulpes vulpes* in Lapwing nesting sites. *Bird Study* 50: 39–46.

Shrubb, M. 2003. *Birds, Scythes and Combines: A History of Birds and Agricultural Change*. Cambridge University Press.

Shrubb, M. 2007. *The Lapwing*. T & A. D. Poyser. London.

Spencer, K.G. 1953. *The Lapwing in Britain*. Brown and Sons. London and Hull.

Taylor I.R. & Grant, M.C.G. 2004. Long-term trends in the abundance of breeding Lapwing *Vanellus vanellus* in relation to land-use change on upland farmland in southern Scotland. *Bird Study* 51 (2) 133–142.

Taylor, K., Wood-Gee, V., Carroll, J. & Chapman, C. 2012. *High Nature Value Farmland in Scotland - Farm Characteristics and Practices. 2011*. Scottish Natural Heritage Report. Unpublished.

Vickery J.A., Tallowin J.R., Feber R.E., Asteraki, E.J., Atkinson P.W., Fuller, R.J. & Brown, V.K. 2001. The management of lowland neutral grasslands in Britain: effects of agricultural practices on birds and their food resources. *Journal of Applied Ecology* 38(3): 647–664.

Whittingham, M.J. & Evans, K.L. 2004. The effects of habitat structure on predation risk of birds in agricultural landscapes. *Ibis* 146(2). 210–220.

Wilson, A., Ausden, M. & Milsom, T.P. 2004. Changes in breeding wader populations on lowland wet grasslands in England and Wales: causes and potential solutions. *Ibis* 146: 32–40.

Wilson, A.M., Vickery, J.A., Brown, A., Langston, R.H.W., Smallshire, D., Wotton, S. & Vanhinsbergh, D. 2005. Changes in the numbers of breeding waders on lowland wet grass-lands in England and Wales between 1982 and 2002. *Bird Study* 52: 55–69.

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Revised ms accepted March 2021

Long-term changes in the numbers of wintering waders in the Moray Firth 1988/89 to 2020/21

R.L. SWANN

Co-ordinated counts of waders have been conducted in the Moray Firth since the 1980s. This paper examines changes that have occurred over a 33-year period up to winter 2020/21. Oystercatcher, Ringed Plover, Bar-tailed Godwit, Turnstone, Dunlin, Purple Sandpiper and Redshank showed significant decreases in numbers. Knot and Sanderling significantly increased and Curlew showed no significant trend. A comparison of Moray Firth wader trends with changes at a UK level showed that, with the exception of Knot and Curlew, trends followed similar patterns. Reasons are suggested for the changes in numbers.

Introduction

The Moray Firth comprises the most northerly group of estuaries in Britain and holds internationally important concentrations of wintering waders (Symonds & Langslow 1986). As a result, four areas: Dornoch Firth and Loch Fleet, Cromarty Firth, Inner Moray Firth and Moray and Nairn Coast, have been designated as Special Protection Areas on account of the number of wintering waterfowl and waders that they hold. Counts of waterfowl and waders in the Moray Firth have been undertaken since the early 1960s, though it was not until January 1985 that the first complete co-ordinated count of the entire Moray Firth was made. These have continued ever since as part of the Wetland Bird Survey (WeBS), a joint scheme run by the British Trust for Ornithology, the Wildfowl & Wetlands Trust, the RSPB and the Joint Nature Conservation Committee, which aims to monitor the number of non-breeding waterbirds throughout the UK.

Swann & Mudge (1989) examined changes in wader numbers at a subset of sites within the Moray Firth between winters 1972/73 and 1974/75 and winters 1985/86 and 1987/88 and showed that whilst Oystercatchers had increased, Knot and Dunlin had declined. Kalejta-Summers (2006) examined changes over the entire Moray Firth between winters 1988/89 and 2002/03 and found that, for most species, numbers had remained stable over that period, but Knot and Sanderling had increased, and Purple Sandpipers and Turnstones had declined. This paper extends Kalejta-Summers' 2006 analysis by examining changes in the number of waders in the Moray Firth over the 33-year period between 1988/89 and 2020/21 and makes comparisons with UK trends.

Methods

Four co-ordinated counts were conducted each winter in the Moray Firth during October, December, January and February, involving a minimum of 46 volunteer counters and covering much of the coastline between Brora and Buckie (Figure 1). Uncounted sections were known to hold very low numbers of roosting waders. In this paper, only counts from December, January and February were used, because for some species, the October count includes a variable number of birds on passage through the Moray Firth (Swann & Mudge 1989). To carry out the counts, the firth was split into 61 sectors. If each sector was counted in all three months, it would result in 6,039 counts over the 33-year period. The total number actually surveyed was 5,968 (98.8%). Of the 71 counts that were not completed, only 14 were from sectors with a large number of birds. As a result, no corrections have been made for missing data as they were unlikely to have a major effect on overall trends. For each of the ten species examined, the total in each of the 61 sectors was summed to give a total

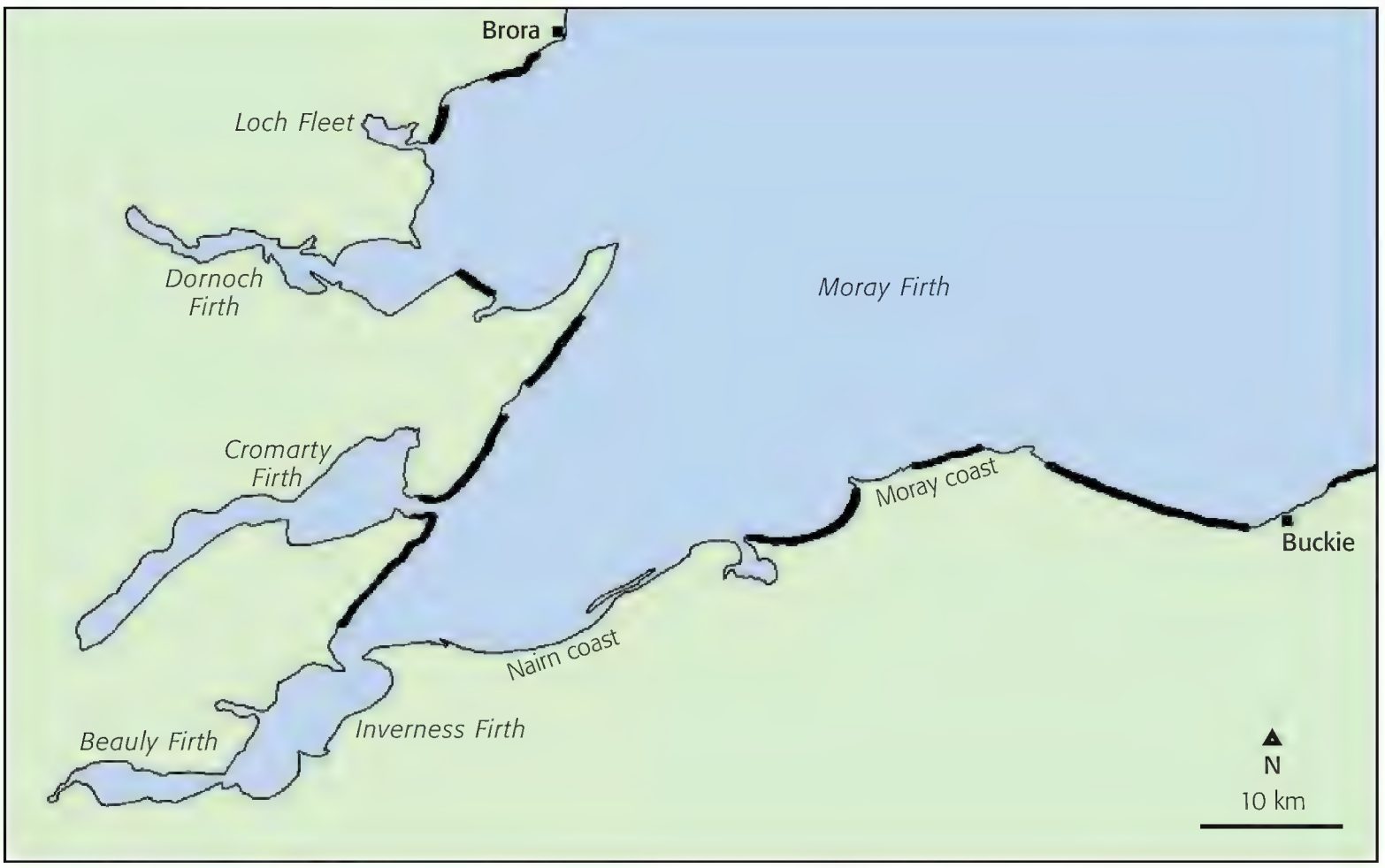

Figure 1. The Moray Firth showing counted (thin line) and uncounted (thick line) sections.

for the Moray Firth in a given month. To obtain the winter total, the three-monthly species' totals were summed and then the mean of these three counts was calculated. Using the mean count helps to reduce the effect of inaccurate counts associated with factors such as weather, disturbance and double-counting, and follows the method used by Kalejta-Summers (2006).

To test for long-term trends, Spearman rank correlation coefficients between total numbers and winters were calculated. The totals were also converted to $\log_{10}$ in order to carry out a linear regression analysis to calculate the annual rate of change. In order to make a comparison between the trends in numbers of waders in the Moray Firth with those available for the whole of the UK, the period 1992/93–2017/18 was used. These were the most up to date UK data available and are based on smoothed population indices over a 25-year period (Frost *et al.* 2020). The data for the Moray Firth were smoothed by producing a rolling five-year mean with the first five years compared with the last five years over the same 25-year period.

Table 1. Spearman rank correlation coefficients (r_S) and *P* values for winter counts of waders in the Moray Firth between 1988/89 and 2020/21. The sample size was 33 for all species.

Species	Correlation coefficient r_s	*P* value
Oystercatcher	-0.75	<0.001
Ringed Plover	-0.64	<0.001
Curlew	-0.19	>0.02
Bar-tailed Godwit	-0.70	<0.001
Turnstone	-0.94	<0.001
Knot	+0.44	<0.02
Sanderling	+0.87	<0.001
Dunlin	-0.79	<0.001
Purple Sandpiper	-0.81	<0.001
Redshank	-0.53	<0.002

Table 2. Annual percentage change in the numbers of waders in the Moray Firth between winters 1988/89 and 2020/21, based on the slope from a linear regression of $\log_{10}$ numbers against winter for each species.

Species	% change
Oystercatcher	-1.15
Ringed Plover	-2.05
Curlew	-0.23
Bar-tailed Godwit	-2.28
Turnstone	-4.06
Knot	+3.04
Sanderling	+7.40
Dunlin	-3.39
Purple Sandpiper	-4.06
Redshank	-1.15

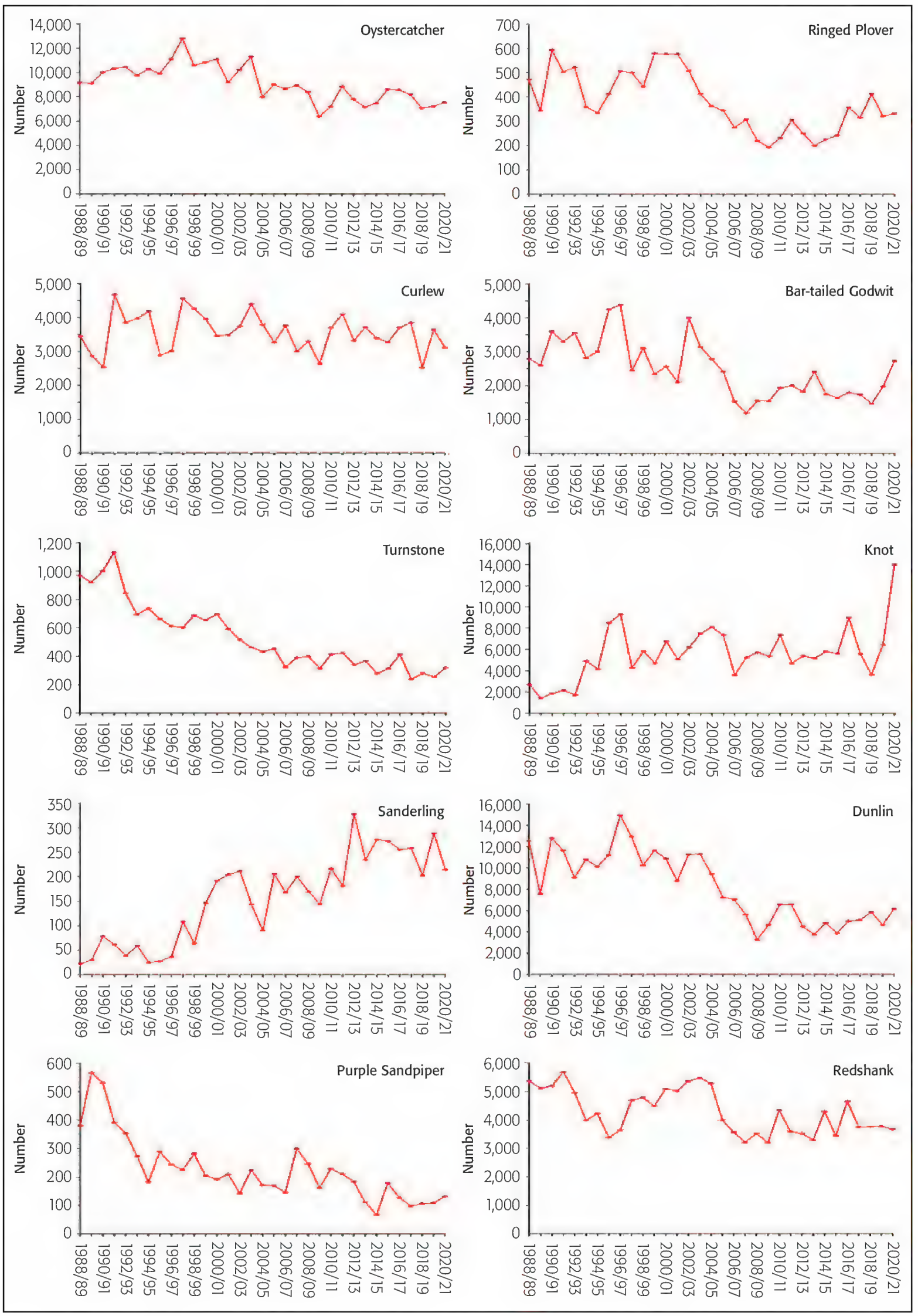

Figure 2. Moray Firth mean winter wader numbers from winters 1988/89 to 2020/21.

Results

Seven species, Oystercatcher *Haematopus ostralegus*, Ringed Plover *Charadrius hiaticula*, Bar-tailed Godwit *Limosa lapponica*, Turnstone *Arenaria interpres*, Dunlin *Calidris alpina*, Purple Sandpiper *Calidris maritima* and Redshank *Tringa totanus* showed significant declines in numbers between winters 1988/89 and 2020/21 (Figure 2). Curlew *Numenius arquata* showed no significant trend and Knot *Calidris canutus* and Sanderling *Calidris alba* showed a significant increase in numbers (Table 1). However, between winters 1997/98 and 2020/21 Knot numbers showed no significant change (r_s = 0.14, p>0.05). The annual rate of change varied between species ranging from +7.40% for Sanderling to -4.06% for both Turnstone and Purple Sandpiper (Table 2).

Comparing wader numbers over a 25-year period (winters 1992/93 to 2017/18) in the Moray Firth with those available for the UK, showed declines in numbers of Oystercatcher, Ringed Plover and Redshank in the Moray Firth that were roughly similar to those recorded in the whole of the UK (Table 3). For Bar-tailed Godwit, Turnstone, Dunlin and Purple Sandpiper the declines were greater in the Moray Firth than those recorded UK-wide. Whilst Curlew and Knot numbers were respectively stable or increasing in the Moray Firth, both declined at a UK level. Sanderling was the only species to show an increase both locally in the Moray Firth and UK-wide.

Table 3. Percentage change in wader numbers in the Moray Firth and the UK between 1992/93 and 2017/18. The UK figures are from Frost *et al.* 2020 based on smoothed population indices over a 25-year period. The Moray Firth figure is based on the five-year moving mean over the same period.

Species	Moray Firth	UK
Oystercatcher	-19	-23
Ringed Plover	-45	-52
Curlew	+3	-33
Bar-tailed Godwit	-41	-17
Turnstone	-67	-43
Knot	+218	-20
Sanderling	+461	+36
Dunlin	-58	-41
Purple Sandpiper	-74	-50
Redshank	-26	-17

Discussion

Nine of the ten Moray Firth species examined showed significant changes in numbers over the 33-year period. Changes in wader numbers on wintering grounds can be the result of a change in the overall total population of that species or a change in their winter distribution. Declines in waders in the UK, and a shift to greater occupancy of east coast estuaries than west coast sites have been linked to climatic change (Austin & Rehfisch 2005). Gill *et al.* (2019) suggested that young waders that have not yet become established at wintering sites tend to short-stop on migration and winter closer to their breeding grounds than adults which are site faithful to their wintering grounds. Such a shift in distribution may also apply across Europe (Maclean *et al.* 2008). In the past, many waders were forced to move west or south when the tidal flats of the Wadden Sea froze over (Camphuysen *et al.* 1996). This led to late-winter influxes of some species into UK estuaries such as the Moray Firth (Swann & Mudge 1989). This is now less frequent because there are fewer extremely cold events in continental Europe.

The breeding areas of wintering waders in the Moray Firth extend from the Canadian Arctic, through Greenland and Iceland to Fennoscandia and Arctic Russia. They also include the Faeroe Islands and northern Scotland (Swann & Etheridge 1996). Different conditions affecting these breeding areas and different migration strategies from breeding to wintering grounds will result in different long-term trends shown by each species and will also help explain differences in trends between populations wintering in the Moray Firth and populations wintering elsewhere in the British Isles (Marchant *et al.* 2002).

Oystercatcher and Ringed Plover wintering in the Moray Firth tend to be from populations breeding mainly in northern Scotland (Swann & Etheridge 1996). It is therefore likely that declines in breeding numbers (e.g., Bell & Calladine 2017) are reflected by the observed declines

in wintering populations. For species coming from Fennoscandia and Arctic Russia, such as Dunlin and Bar-tailed Godwit, reductions in winter numbers may be due to young birds now tending to winter on the continent, perhaps short-stopping at former staging sites (Swann & Etheridge 1996) rather than crossing the North Sea to reach the Moray Firth. Results from survey work in Fennoscandia between 2006 and 2018 support this theory as they showed that the number of Dunlins on the breeding grounds increased by 4.1% per year (Lindström *et al.* 2019) yet wintering numbers have declined in the UK and, even more markedly, on the Moray Firth. Lindström *et al.* (2019) also showed that breeding Curlew numbers showed no significant change. A high percentage of Curlew that winter in the Moray Firth breed in Fennoscandia, so this may partly explain why the wintering population has remained stable. Most Curlew fly directly to the Moray Firth with no major staging sites (Swann & Etheridge 1996, Dennis *et al.* 2011), thereby reducing opportunities for short-stopping.

Purple Sandpipers migrating from northern Canada cross the Atlantic in a single flight (Summers *et al.* 2014), thus there is no opportunity to short-stop. It is likely, therefore, that low breeding success could be the cause of the low recruitment observed in the Moray Firth wintering population, as documented by Summers *et al.* (2012). Similarly, Moray Firth Turnstones which breed in Greenland and Arctic Canada (Swann & Etheridge 1996) could be declining for the same reason, but there is no evidence as yet to support this. Redshank wintering in the Moray Firth, originate mainly from Iceland (Swann & Etheridge 1996). The observed decline is possibly a combination of changes in the size of the breeding population and the number of birds overwintering in Iceland, but currently there are no data available to support this.

The increase in Sanderling numbers on the Moray Firth mirrors a UK-wide trend, but the reason for the increase is unclear. More surprising is the increase in Knot numbers compared to overall UK declines. The initial increase in numbers from 1988/89 to 1996/97 (Figure 2) may be linked to a reversal of the decline that was observed between winters 1972/73 to 1974/75 and winters 1985/86 to 1987/88 (Swann & Mudge 1989). Since winter 1996/97, numbers have fluctuated, but with no significant change in trend. The Moray Firth holds a surprisingly high percentage of young Knot averaging around 50% of the wintering population (Summers *et al.* in prep.). Young Knot arrive in the Moray Firth in late summer from their Nearctic breeding grounds, whilst adults stage in large estuaries such as the Wadden Sea and the Wash to moult before moving to the Moray Firth from October onwards (Swann & Etheridge 1996). Whilst adults have the option of remaining to winter on their moulting sites, the young birds may have few options for short-stopping.

The long-term monitoring of wader populations requires continued support for the WeBS programme by skilled and dedicated counters. Given the spectre of climate change that is now affecting all ecosystems, it is important that such monitoring programmes continue. However, to interpret changes, parallel studies of survival, recruitment and movements are also needed.

Acknowledgements

Thanks are due to the large number of volunteer counters, who cover their sectors each year, some of whom have done so since the co-ordinated counts first started. These surveys would not have happened so efficiently without the efforts of the various Moray Firth Estuary co-ordinators, who operated from the RSPB Inverness office up to 2019. Table 3 contains Wetland Bird Survey (WeBS) data from Waterbirds in the UK 2018/19 copyright and database right 2020. WeBS is a partnership jointly funded by the BTO, RSPB and JNCC, in association with WWT, with fieldwork conducted by volunteers. Ron Summers suggested improvements to earlier drafts, produced Figure 1 and provided guidance on the statistical tests. Bozena Kalejta-Summers also provided useful comments.

References

Austin, G.E. & Rehfisch, M.M. 2005. Shifting distributions of migratory fauna in relation to climatic change. *Global Change Biology* 11: 31–38.

Bell, M.V. & Calladine, J. 2017. The decline of a population of farmland breeding waders: a twenty-five-year case study. *Bird Study* 64(2): 264–273.

Camphuysen, C.J., Ens, B.J., Heg, D., Hulscher, J.B., van der Meer, J. & Smit, C.J. 1996. Oystercatcher *Haematopus ostralegus* winter mortality in the Netherlands: the effect of severe weather and food supply. *Ardea* 84A: 469–492.

Dennis, R.H., Etheridge, B., Foster, S., Heaton, J. & Swann, R.L. 2011. Satellite-tracking of a Eurasian Curlew migrating between Scotland and Finland. *Scottish Birds* 31: 3–7.

Frost, T.M., Calbrade, N.A., Birtles, G.A., Mellan, H.J., Hall, C., Robinson, A.E., Wotton, S.R., Balmer, D.E. & Austin, G.E. 2020. *Waterbirds in the UK 2018/19: The Wetland Bird Survey.* BTO, RSPB and JNCC, in association with WWT. British Trust for Ornithology, Thetford.

Gill, J.A., Alves, J.A. & Gunnarsson, T.G. 2019. Mechanisms driving phenological and range change in migratory species. *Philosophical Transactions of the Royal Society B* 374: 2365–2375.

Kalejta-Summers, B. 2006. Changes in numbers and distribution of waders in the Moray Firth, 1988–2003. *Scottish Birds* 26: 1–16.

Lindström, A., Green, M., Husby, M., Kålås, J.A., Lehikoinen, A. & Stjernman, M. 2019. Population trends of waders on their boreal and arctic breeding grounds in northern Europe. *Wader Study* 26(3): 200–216.

Maclean, I.M.D., Austin, G.E., Rehfisch, M.M., Blew, J., Crowe, O., Delany, S., Devos, K., Deceuninck, B., Gunther, K., Laursen, K., van Roomen, M. & Wahl, J. 2008. Climate change causes rapid changes in the distribution and site abundance of birds in winter. *Global Change Biology* 14: 2489–2500.

Marchant, J., Wernham, C., Toms, M., Baillie, S., Siriwardena, G. & Clark, J. 2002. *The Migration Atlas: Movements of the Birds of Britain and Ireland.* T. & A.D. Poyser, London.

Summers, R.W., Foster, S., Swann, B. & Etheridge, B. 2012. Local and global influences on population declines of coastal waders: Purple Sandpiper *Calidris maritima* numbers in the Moray Firth, Scotland. *Estuarine, Coastal and Shelf Science* 102–103: 126–132.

Summers, R.W., Boland, H., Colhoun, K., Elkins, N., Etheridge, B., Foster. S., Fox, J.W., Mackie, K., Quinn, L.R. & Swann, R.L. 2014. Contrasting trans-Atlantic migratory routes of Nearctic Purple Sandpipers *Calidris maritima* associated with low pressure systems in spring and winter. *Ardea* 102: 139–152.

Swann, R.L. & Etheridge, B. 1996. Movements of waders to and from the Moray Firth. *Ringing & Migration.* 17: 111–121.

Swann, R.L. & Mudge G.P. 1989. Moray Basin wader populations. *Scottish Birds* 15: 97–105.

Symonds, F.L. & Langslow, D.R. 1986. The distribution and movement of shorebirds within the Moray Firth. *Proceedings of the Royal Society of Edinburgh.* 90B: 143–167.

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Revised ms accepted March 2021

Bill measurements aid sub-specific identification of Great Spotted Woodpeckers in Britain

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Wing length has been used by researchers to separate the resident British subspecies of Great Spotted Woodpecker from migrants from Fennoscandia, though some degree of overlap exists with this character. In this study, specimens at National Museums of Scotland (NMS) show that bill shape aids subspecific identification, confirming that Fennoscandian birds do occur in Scotland and further south. To help develop datasets birdwatchers are encouraged to donate fresh corpses of Great Spotted Woodpeckers to NMS.

Introduction

The breeding distribution of Great Spotted Woodpecker *Dendrocopos major* extends across the Palearctic with up to 24 subspecies recognised (Parkin & Knox 2010). Subspecies *D. m. anglicus* (hereafter *anglicus*) is the resident breeder in Britain, and *D. m. major* (hereafter nominate *major*), which breeds from Fennoscandia and Poland to Siberia and Ukraine, is a passage migrant and winter migrant to Britain (Cramp 1985, Lack 1986). A third subspecies of potential interest in Britain is *D. m. pinetorum* which breeds in central Europe, though birds from the near continent merge clinally into *anglicus* and those from Denmark and east-central Europe intergrade with nominate *major*, thus making subspecific identification outside the breeding range problematic (Cramp 1985).

Subspecific identification of Great Spotted Woodpecker relies on three features which are strongly clinal across the range of the species. These are bill shape, colouration of the underparts and wing length (Cramp 1985). The British population *anglicus* was described 120 years ago (Hartert 1900), with birds featuring more slender bills, darker undersides and shorter wing lengths when compared with continental birds (principally nominate *major* and *pinetorum*) (Hartert 1900, 1907). *D. m. anglicus* is recognised by Vaurie (1965), Cramp (1985) and BOU (2017), though not by Winkler *et al.* (1995).

The status of nominate *major* in Scotland is that of a passage migrant and winter visitor; autumn and winter records are generally few with a wide geographical spread, though irruptions occasionally occur (Forrester *et al.* 2007). The status and frequency of occurrence of nominate *major* has often been a matter of some speculation. Witherby *et al.* (1938) reported nominate *major* in Britain as a 'winter visitor, apparently regular in small numbers Sept to Nov', though further noting that 'Few specimens have yet been critically examined but evidence [...] is strongly presumptive.' Whilst this was fair comment, the determination of specimen records was apparently based on wing length - this being the sole quantitative feature of the three subspecific characters. Witherby *et al.*'s (1938) quoted maximum wing lengths for *anglicus* were 135 mm (males) and 136 mm (females), and the range of wing length for nominate *major* was 135–147 mm (sexes combined), so presumably any birds with wing length greater than 136 mm were simply attributed to nominate *major*.

An identical wing length discriminant, derived from museum specimens, later appeared in literature for bird ringers as a means of distinguishing nominate *major*, with 136 mm given as the maximum for *anglicus* (Baker 1980). On a restricted sample (28 birds), *The Birds of the Western Palearctic* gave a more moderate wing length range of 126–134 mm for *anglicus* (Cramp 1985).

The lack of overlap in wing length between *anglicus* and nominate *major* was again used to support a wing length of 136 mm as a discriminant value for nominate *major* in Baker (1993).

For a long period, therefore, it was generally assumed that 'continental' Great Spotted Woodpeckers (nominate *major*) could be identified in Britain if wing lengths of skins exceeded 136 mm. It is probable that some specimens acquired by museums in that period would have been assigned to this subspecies on this criterion alone.

More recently, large data sets for wing length held by the BTO have been analysed to assess the occurrence and distribution of long-winged Great Spotted Woodpeckers in Britain (Coulson & Odin 2007, Smith 2010). Results indicated that the range of wing length in *anglicus* is greater than previously understood and this overlaps with wing length of nominate *major*. Both studies concluded that in Britain only birds with wing lengths greater than c. 142 mm (live) or c. 139 mm (skins) could reasonably be assumed to be nominate *major*. Noting Hartert's original comments on bill shape, Smith (2010) urged ringers to record bill dimensions for trapped Great Spotted Woodpeckers in order to generate a dataset for this feature. The updated *BTO Guide to Ageing and Sexing* adopted wing lengths of greater than 142 mm (live birds) (c. 140 mm, skins) as "almost certainly" nominate *major* (Baker 2016).

However, a more immediate way of assessing the revised wing length criterion in conjunction with bill shape involves the examination of museum collections. A review of Great Spotted Woodpecker skins at NMS was recently undertaken as some specimens were known to have been expeditiously assigned to subspecies by specimen label names when the collections were installed in a new building a few years ago. The review would help validate subspecific diagnosis according to revised wing length data, particularly in the case of Scottish or British specimens previously assigned to nominate *major* (Forrester *et al.* 2007). Further, quantified analysis of bill shape might confirm this as a useful distinguishing feature. The main outcome would be the positive identification of voucher specimens of nominate *major* collected at Scottish localities.

Methods

The relevant sample comprised 107 skins, 28 labelled as nominate *major* and 79 labelled as *anglicus*. All wing lengths (maximum chord) were measured by TWD using a 300 mm stopped rule. For segregating the subspecies, we followed Baker (2016) who assigned birds with wing length of >142 mm to nominate *major*. However, as that value was based on live birds, we reduced the value to >= 140 mm as a conservative allowance for c. 1.8% shrinkage in skins (1.8% of 142 = 2.6 mm) (Svensson 1992, Smith 2010). Using such a conservative threshold value will misclassify the shortest-winged nominate *major* as *anglicus*. Three types of specimen were excluded from the sample: (a) recently fledged birds; (b) those described as juvenile which were dated prior to 1 October (as primary feathers and hard parts could still have been growing); and (c) adults in obvious wing moult.

To investigate the potential value and consistency of Hartert's comments on overall bill shape, measurements were taken for each specimen with dial calipers; all measurements by TWD. The variation in bill shapes across the sample was easily observed, an aspect noted also by Witherby *et al.* (1938). The following three bill measurements (mm) were recorded: (a) culmen length = tip to skull (Baker 2016); (b) depth at skull; and (c) width at skull. All three bill measurements were not available for all specimens; for example, some depth measurements were lacking as bills were incompletely closed. It was not possible to evaluate the coloration of underparts due to uncertainty over which skins might have been washed prior to preparation.

Age and sex of specimens were noted from label data (i.e. derived from plumage and gonads during preparation). Males and females have almost identical wing lengths. One previously

unsexed specimen was excluded after an unsuccessful attempt to determine sex by genetic analysis (per Prof J.M. Collinson, University of Aberdeen) and one specimen from 'South Russia' was excluded as its subspecific identity was unresolved due to the vague geographic origin.

Results

Wing lengths

The review sample totalled 105 specimens. On the criterion of a 140 mm wing length for skins separating the two subspecies, three British specimens originally accessioned as nominate *major* were reassigned to *anglicus*, and three specimens accessioned as *anglicus* were reassigned to nominate *major* (Table 1) A full list of specimens of nominate *major* from Scotland and the North Sea is shown in Table 2.

Table 1. Reassignation of specimens to subspecies.

Accession no.	date	locality	sex	wing	Subspecies reassigned to:
1934.61.2071	25 October 1909	Great Yarmouth, Norfolk	m	139	*anglicus*
1970.40	11 June 1968	Threipmuir, Lothian	f	138	*anglicus*
1992.38.1	01 January 1990	Edinburgh, Lothian	f	138	*anglicus*
1898.4.202	00 November 1887	Wells, Norfolk	m	142	nominate *major*
1970.76.1360	24 October 1910	West Linton, Peeblesshire	f	142	nominate *major*
1950.18.43	24 September 1949	Fair Isle	m	141	nominate *major*

Table 2. Specimens of *D. m. major* from Scotland and its North Sea area.

Accession no.	date	locality	sex
1970.76.1360	24 October 1910	West Linton, Peeblesshire	f
1929.122	2 September 1929	Unst, Shetland	f
1929.139	2 October 1929	Sumburgh, Mainland, Shetland	f
1929.150	20 October 1929	Bixter, Mainland, Shetland	m
unregistered	08 October 1949	Isle of May	m
1950.18.42	16 October 1949	Fair Isle	m
2013.33.27	13 October 1962	Brora, Sutherland	f
2013.33.28	17 January 1963	Helmsdale, Sutherland	f
1992.52.3	14 October 1990	North Alwyn platform, 160 km E of Shetland	Not det.*
1996.8.1	9 September 1994	Quarff, Mainland, Shetland	f

*Not det = Not determined.

Irruptions

As might be expected, collection dates and localities generally accord with migration in known irruption years. As Great Spotted Woodpecker does not breed in the Northern Isles, irruptions tend to be obvious there, so providing indicators for irruptions across the rest of Scotland (Forrester *et al.* 2007). In the British Isles irruptions have been noted in 1929, 1949, 1962, 1968, 1974, 1990, 1994, 2001 (Forrester *et al.* 2007, Coulson & Odin 2007). More recently, the patterns of occurrence in years up to 2018 indicate that irruptions occurred in 2012 and 2013 (Online Scottish Bird Report).

Wing lengths and bill measurements

The revised sample comprised 26 nominate *major* and 79 *anglicus*. A total of 56 specimens provided all four biometrics, and 54 known-sex specimens, 30 male and 24 female, provided all three bill measurements. Biometrics of bill and wing length are summarised in Table 3. The full dataset has been deposited at NMS.

Plots of wing length against bill parameters (Figs 1a, 1b, 1c) indicate the relationships. There is no significant linear relationship (Pearson correlation coefficient 'r') between wing length and bill

length (r = -0.14, n = 57, p=0.30), but highly significant relationship between wing length and bill depth (r = 0.72, n = 56. p<0.001) and between wing length and bill width (r = 0.50, n = 57, p<0.001). The strongest correlation is between wing length and bill depth.

TWD further considered the approximation of bill shape by combining all three metrics into a single one. The bill can be regarded as a three-dimensional kite, and an estimate of bill volume calculated from the three bill measurements: (area of kite base x height)/3 or [(bill depth x bill width/2) x bill length]/3. The relationship between wing length and volume (= Bill Shape Index) is shown in Figure 1d. However, correlation was only moderate (r = 0.57, n= 54), so bill volume appears not to be a very useful proxy for bill shape. It is possible, for example, that some specimens with very long thin bills have similar volumes to others with very short deep bills. The development of a quantitative descriptor of bill shape would be a useful tool in elucidating this.

An issue with using a threshold value of 140 mm wing to identify specimens to subspecies is that the smallest of nominate *major* might be misidentified as *anglicus*. We therefore used an alternative approach to separating the subspecies by simply clustering those specimens with similar measurements to seek patterns consistent with two populations differing in wing length and bill shape. The 56 specimens with all four measurements were clustered in two groups (Minitab 2000, 'clustering of observations') starting with the two most similar specimens and proceeding stepwise adding each most similar specimen in turn until all were clustered in one group or the other.

Ninety-six percent of specimens clustered 'true' to their original subspecific identity; 23 had previously been identified as nominate *major* and all clustered in one group whereas 33 had been identified as *anglicus* and all but two ended up in the other group. Of the two specimens that had previously been identified as *anglicus*, one involved a bird collected in Wells, Norfolk, in November 1887 and the other a bird collected in West Linton, Peeblesshire, Borders, on 24 October 1910. Both

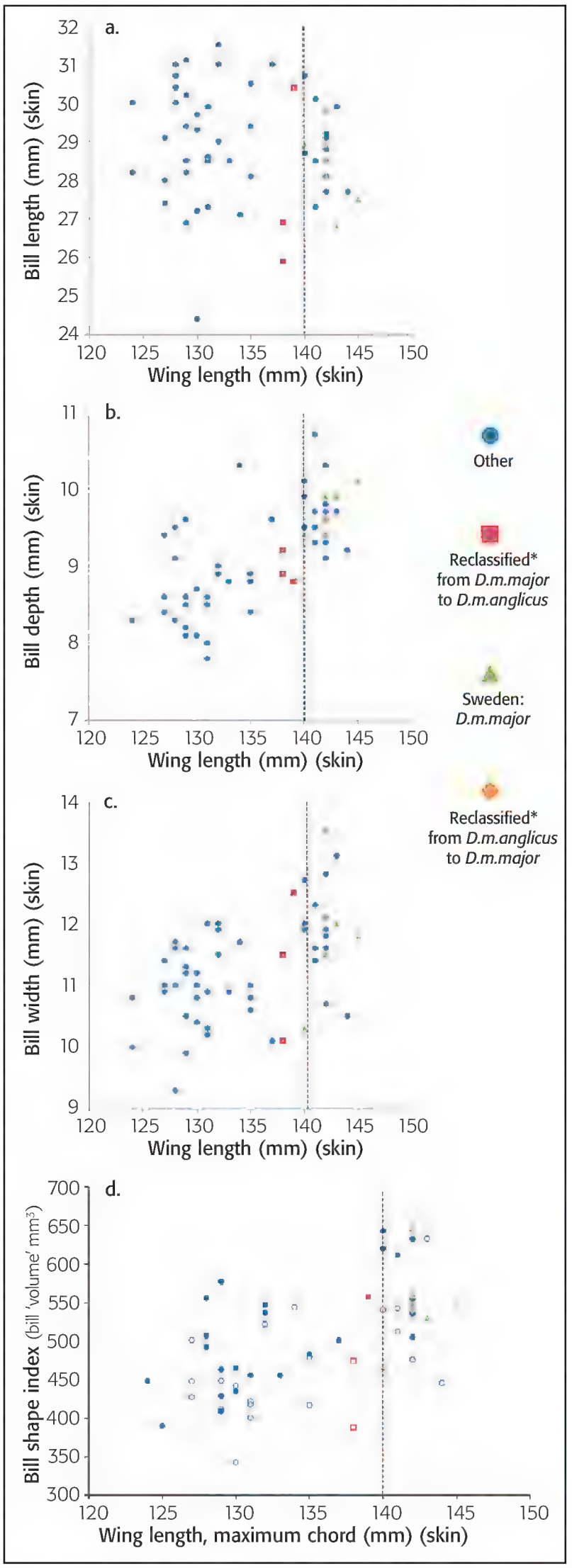

Figure 1a–d. Relationship between wing length and a) bill length, b) bill depth, c) bill width and d) bill volume.

specimens have long wings and relatively short, stout bills. The average and range of values for the four measurements following the reclassification of these two specimens (Table 3) suggest that by taking account of bill shape, some specimens with wings slightly shorter than 140 mm could more closely resemble nominate *major* than *anglicus*.

Cluster Analysis is useful here since it classifies the specimens into two groups, equivalent to the two subspecies, purely on the basis of the four measurements. For this analysis, the Fair Isle bird in Table 1 has been excluded since it was collected as a juvenile, pre-October. Presumably it is a clear nominate *major* since if the remiges may still have been growing, unusual itself in a migrating bird, 141 mm is possibly not the full wing length. Interestingly, the five remaining birds were classed as nominate *major* using wing length and bill depth, although two had already been re-assigned as nominate *major* on wing length alone. The June 1968 specimen from Lothian, resident in summer, is highly unlikely to be nominate *major*, so must be at the upper size range for *anglicus*. Therefore, it is possible that both the October 1909 bird from Great Yarmouth and the January 1990 bird from Edinburgh were at the lower end of the size range for nominate *major*. Until there has been further investigation of a larger sample of birds, here we will be conservative and follow the current literature and treat these two birds as *anglicus* based on wing length.

Table 3. Average descriptive statistics by subspecies, following reclassification of two specimens, as indicated by Cluster Analysis. * Two sample 't' test, degrees of freedom adjusted assuming unequal variance.

Variable (from skin)	Subspecies	n	Mean	St. Dev.	Minimum	Maximum	't' (df)*	Probability of no difference
Wing length (mm)	*anglicus*	31	130.23	3.00	124	137		
	major	25	141.20	1.87	137	145	17.11 (52)	<0.0005
Bill length (mm)	*anglicus*	31	29.00	1.56	24.4	31.5		
	major	25	28.51	1.32	25.9	30.7	1.46 (54)	0.151
Bill depth (mm)	*anglicus*	31	8.68	0.56	7.8	10.3		
	major	25	9.60	0.45	8.8	10.7	6.86 (53)	<0.0005
Bill width (mm)	*anglicus*	31	11.03	0.59	9.9	12.0		
	major	25	11.83	0.82	10.1	13.5	4.28 (45)	<0.0005

As expected, using a wing length threshold ignores any overlap in wing length between subspecies and will inevitably misclassify the longest-winged *anglicus* and shortest-winged nominate *major*. Cluster Analysis suggests that using measurements of wing and bill is a more reliable way of distinguishing nominate *major* from *anglicus*. Bill shape was noted by Hartert as a useful character, and Smith (2010) encouraged ringers to acquire bill measurements to expand the BTO dataset which only had 22 bill depth measurements at that time.

From Table 3, and using wing length and bill depth, then, individuals with wing length <= 136 mm are probably *anglicus,* and if they have a bill depth of <=8.7 mm and a bill width of <=10.0 mm, they are almost certainly *anglicus*. The equivalent wing length for live birds is <= 138.5 mm, when compensating for the 1.8% shrinkage in wing lengths of skins. For nominate *major* the corresponding figures for skins are >= 138 mm (for live >= 140.5 mm) and >= 10.4 mm. However, before these data can have a general application, they should be tested against a more comprehensive dataset.

Discussion

This investigation relied on specimens at NMS only, but it is reasonable to assume that Great Spotted Woodpeckers in the collection represented a sample that had no bias for particular subspecific characters. In other words, NMS acquired examples of the species, rather than a particular subspecies. Any extra-limital examples of nominate *major* defined by wing length were assumed to exhibit features of that subspecies that were typical also. Measurement bias was minimised by one person carrying out the measurements.

The period of active moult of primaries in nominate *major* occurs later than in *anglicus*, particularly so in irruption years when juveniles can slow down or suspend primary moult (Baker 2016); accordingly wing length data presented here for nominate *major* skins may be regarded as minima.

As noted by Hartert (1900), bills of nominate *major* are typically very broad, blunt and short in comparison with the more slender bills of *anglicus*, though his parameters were not quantified. Further, he did not indicate if his quoted wing lengths were maximum chord, nor did he supply the collection dates of the specimens, other than one dated 2 January 1895. The cluster analysis for NMS specimens is speculative and requires validation against data from the breeding range of nominate *major*, but it does generate means and ranges of values for wing and bill dimensions consistent with the variation in bill shape described by Hartert.

Plate 212. Great Spotted Woodpecker, Aboyne, North-East Scotland, December 2018. © *Harry Scott*

NMS holds 13 Great Spotted Woodpecker skins with wing lengths >= 141mm (equivalent to 143.5 mm for live birds) from localities in the British Isles. Four are from the British mainland: two from Great Yarmouth, Norfolk, dated 8 October 1914 and 26 September 1926; one from Wells, Norfolk dated November 1887; and one from West Linton, Peeblesshire dated 24 October 1910. This demonstrates that long-winged birds have occurred on the British mainland, and indeed up to 25 km inland in the case of the West Linton bird. Whilst these specimen records are historical, this may simply reflect an era when active collecting was a more normal practice.

Smith (2010) argued that wing length alone was insufficient to attribute a subspecies identification for individual birds, other than at the highest values; long-winged birds (>139 mm) in Scotland were likely to have come from Scandinavia. Ringers were urged to generate a data-set for bill measurements in addition to wing. On the results reported here, we are confident that the specimen records of long-winged birds (>= 140 mm) confirm the occurrence of nominate *major* in Britain, and not just along the east coast or only in irruption years (viz. the West Linton specimen). Further, subspecific determination is aided by use of bill biometrics. Guidance to bird ringers should emphasise the utility of these measurements to help elucidate the frequency of occurrence of nominate *major* in Britain. As Fennoscandian migrants are arguably most likely to reach Scotland in proportionally greater numbers (as with Waxwing *Bombycilla garrulus*, for example), biometrics of birds from Scottish localities offer the optimum method of detecting this subspecies.The

retention of shed feathers for DNA analysis should also be routine. Ideally, underparts coloration should be scored against a colour chart to test the validity of that character. The generation of a dataset of measurements and colour scores for Great Spotted Woodpeckers over a period of years will hopefully reveal whether nominate *major* is an annual migrant or otherwise.

Another requirement is the collation and analysis of measurements from much larger samples of both *anglicus* and nominate *major*, identified solely on the basis of birds having been collected within their respective exclusive breeding ranges. This approach would involve measuring additional specimens from other collections or measuring live individuals.

Acknowledgements

We are grateful to Dr. Mick Marquiss for improving the text, advising on statistics and conducting the Cluster Analysis, and to Prof J. Martin Collinson for attempting the genetic sexing of the unsexed specimen. Ian Andrews patiently responded to various queries on graphics. Their inputs were invaluable.

References

Baker, J.K. 1980. A guide to ageing & sexing non-passerines (part 2). *Ringers' Bulletin* 5: 91–94.

Baker, J.K. 1993. *Identification Guide to European Non-passerines.* BTO, Thetford.

Baker, J. 2016. *Identification of European Non-Passerines.* BTO, Thetford.

British Ornithologists' Union. 2017. *The British List: A Checklist of Birds of Britain* (9th edition). *Ibis* 160: 190–240.

Coulson, J. & Odin, N. 2007. Continental Great Spotted Woodpeckers in mainland Britain - fact or fiction? *Ringing & Migration* 23: 217–222.

Cramp, S. (ed). 1985. *The Birds of the Western Palearctic.* Vol. IV. Oxford University Press, Oxford.

Forrester, R.W., Andrews, I.J., McInerny, C.J., Murray, R.D., McGowan, R.Y., Zonfrillo, B., Betts, M.W., Jardine, D.C. & Grundy, D.S. (eds) 2007. *The Birds of Scotland.* The Scottish Ornithologists' Club, Aberlady.

Hartert, E. 1900. Some miscellaneous notes on Palaearctic birds. *Novitates Zoologicae* 7: 525–534.

Hartert, E. 1907. On birds represented in the British Isles by peculiar forms. *British Birds* 1: 208–222.

Minitab. 2000. *Minitab Release 13, Users Guide 2, 'Clustering of Observations'.* Minitab Inc., USA.

Lack, P. 1986. *The Atlas of Wintering Birds in Britain and Ireland.* T. & A.D. Poyser for BTO and IWC, Calton.

Parkin, D.T. & Knox, A.G. 2010. *The Status of Birds in Britain and Ireland.* Christopher Helm, London.

Smith, K.W. 2010. Continental Great Spotted Woodpeckers *Dendrocopos major* in Britain - further analyses of wing-length data. *Ringing & Migration* 25: 65–70. DOI:10.1080/03078698.2010.9674419

Online Scottish Bird Report (oSBR). www.the-soc.org.uk/about-us/online-scottish-bird-report (Accessed 10 October 2020).

Svensson, L. 1992. *Identification Guide to European Passerines.* Svensson, Stockholm.

Vaurie, C. 1965. *The Birds of the Palearctic Fauna: Non-Passeriformes.* Witherby, London.

Winkler, H. Christie, D.A. & Nurney, D. 1995. *Woodpeckers: A Guide to the Woodpeckers, Piculets and Wrynecks of the World.* Pica Press, Robertsbridge.

Witherby, H.F., Jourdain, F.C.R., Ticehurst, N.F. & Tucker, B.W. 1938.*The Handbook of British Birds.* Vol. 2. Witherby, London.

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Revised ms accepted April 2021

Nuthatch colonisation of Glenfalloch Estate, Loch Lomond and the Trossachs National Park

Nuthatch *Sitta europaea* is a relatively recent colonist to Scotland, first recorded breeding in the Borders in 1989 before rapidly moving into large areas of southern Scotland in the 1990s, despite being perceived as very sedentary (Forrester *et al.*, 2007). Nuthatches have continued to spread northwards, with many central and northern areas receiving their first records, including the first confirmed breeding in successive years in Highland (*Highland Bird Report*, 2020) and North-East Scotland (Broadbent & Scott, 2021).

Since 2015, we have undertaken systematic annual breeding bird surveys of Glenfalloch Estate, at the north end of Loch Lomond as part of Scottish Government Rural Payments and Services Department funded estate wide monitoring. Every 1 km^2 of Glenfalloch Estate has been surveyed for breeding birds and the same survey routes were followed on each survey visit, providing repeatability across months (April–July) and years (2015–2021). It should be noted that early season surveys in 2020 were curtailed by COVID-19, but once work restrictions eased, surveys recommenced as per other years.

Regular Nuthatch sightings have been recorded in the Balloch area (south end of Loch Lomond) from 2005 and the first record of Nuthatch in Glenfalloch was in 2013 during the breeding season. Nuthatch appeared all over the Clyde recording area from Lanarkshire, to Glasgow, to Renfrewshire and Loch Lomond almost at the same time (Val Wilson, Clyde recorder). Zul Bhatia has provided the BirdTrack records of Nuthatch from the Clyde recording area, with 2,469 records between March 2005 and March 2021, illustrating that the species is now common across the Clyde recording area. Jim Dickson (Argyll recorder) provided a historical summary for adjacent Argyll (*pers. comm.*). In the late 1990s and onwards a very small central core of reports came from mature woodland areas of the Cowal peninsula. As birds have spread from further south in Scotland and reports of birds up western side of Loch Lomond (in Clyde recording region) it seems likely that Argyll birds came from this direction. From 2008 onwards Nuthatches were recorded relatively far west into Argyll and even onto some islands (e.g. Jura, Kerrera and Mull). As well as the Cowal stronghold, where the first breeding was confirmed, Nuthatch breeding was confirmed at Ardkinglass in 2011, followed by establishment in north Argyll (between northern Mid-Argyll and northern Argyll in the Dalmally–Taynuilt–Bonawe areas of Loch Etive) – well to the north-west of Glenfalloch. According to the 2018 *Argyll Bird Report*, Nuthatch is a rare but increasing visitor and is now well established in Cowal (6 sites), Mid-Argyll (10 sites) and North Argyll (3 sites) (https://www.the-soc.org.uk/about-us/online-scottish-bird-report).

Here we report on the colonisation and consolidation of breeding Nuthatches at Glenfalloch Estate up to and including 2021 (Table 1). Glenfalloch Estate is a large estate within Loch Lomond and the Trossachs National Park. The estate is mostly upland in character, but along the north-east shore of Loch Lomond and along the River Falloch extensive and important areas of native broadleaved and conifer woodland are present, most of which is under direct conservation management. Much of the woodland within the study area is mature oak woodland, which is known to be a preferred Nuthatch breeding habitat (Snow *et al.*, 1998).

In 2017 four widely dispersed pairs of Nuthatch were recorded holding territory and breeding (Figure 1). Family groups including juveniles

Table 1. Estimated number of Nuthatch breeding pairs recorded during breeding bird surveys 2015–2021 at Glenfalloch Estate.

Year	Number of Nuthatch pairs recorded
2015	0 pairs
2016	0 pairs
2017	4 pairs
2018	5 pairs
2019	8 pairs
2020	12 pairs
2021	17 pairs

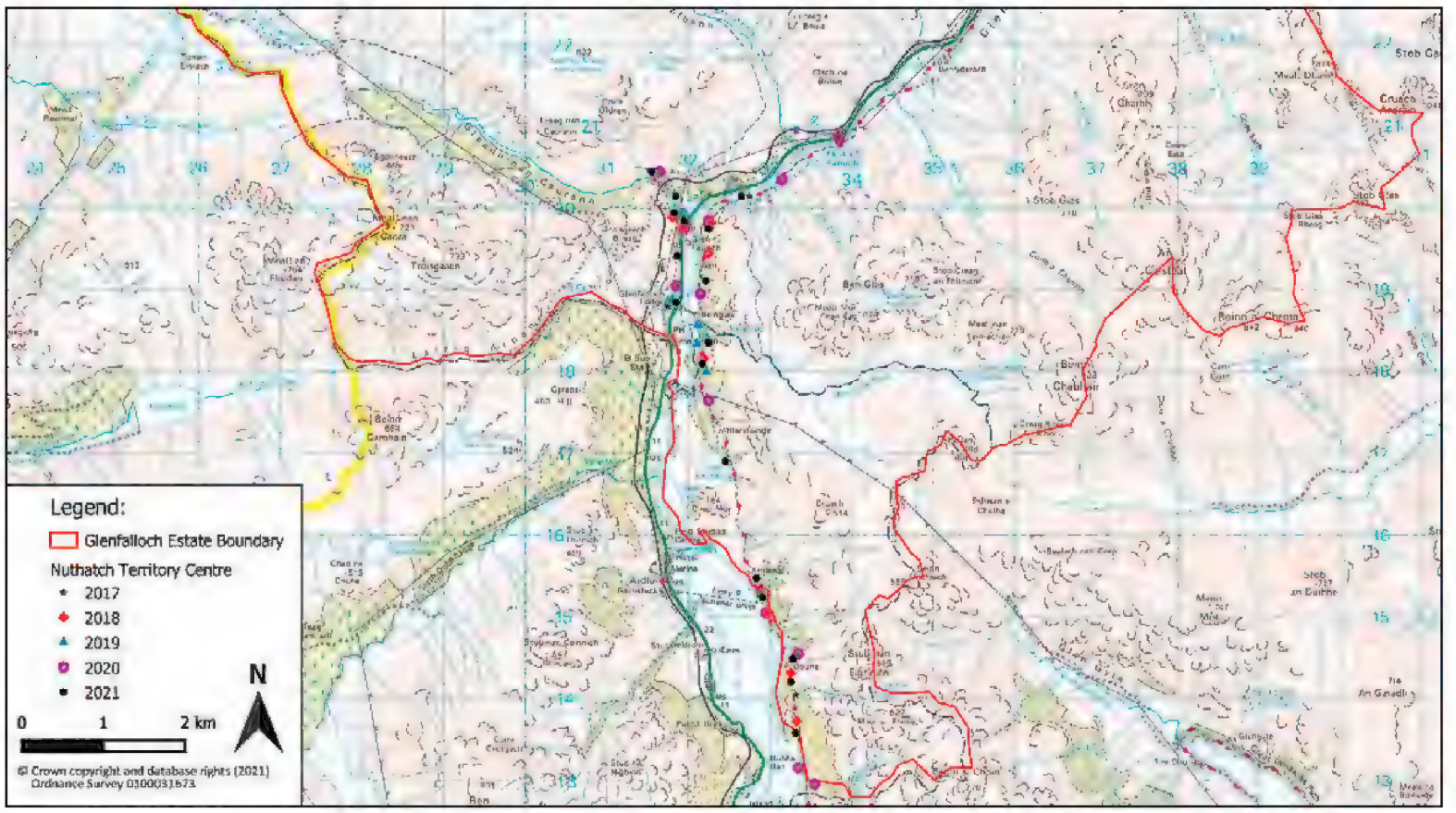

Figure 1. Nuthatch territory centres, Glenfalloch Estate 2017–2021.

were recorded within three of the four territories later in the season (June–July). In 2018 five pairs were recorded breeding with three territories relatively close together (Figure 1) and juveniles were again recorded later in the season. In 2019, the number of pairs increased to an estimated eight (Figure 1). Territorial disputes were sometimes recorded where pairs were relatively close together. In 2020 the number of breeding pairs increased again and the pairs seemed more spread out than clumped together based on what were perceived to be territory centres (Figure 1). Finally, in 2021 an estimated 17 pairs bred across the estate, predominantly in areas occupied in previous years.

From initial colonisation, Nuthatches have rapidly colonised all the broadleaved woodland areas of Glenfalloch Estate. None of the Nuthatches have been colour-ringed, so the number of pairs estimated reflects the number of pairs recorded during repeat survey visits and watching territorial disputes etc. Glenfalloch Estate does not have a nest box programme, so all the nests occupied are presumed to be natural tree nest sites.

Evidently, Nuthatches have found the Glenfalloch Estate broadleaved woodlands suitable and have rapidly consolidated their breeding population since arriving in the winter of 2016. The winter weather was relatively benign between 2017 and 2021, which is likely to have helped overall winter survival into the following breeding season. The speed of colonisation and large increase in numbers has some precedence in Scotland. For example, rapid colonisation took place in the Borders during the 1990s, where they went from two pairs in 1989 to exceed 220 pairs in 2004 and a similar though less dramatic colonisation took place in Dumfries and Galloway (Forrester *et al.*, 2007). The Nuthatch expansion in Scotland is thought to be at least partly climate change driven and also due to the regular provision of food during the winter e.g. peanut feeders, fat-balls etc. (Forrester *et al.*, 2007).

Acknowledgements

We thank the following people for their direct help, logistical and fieldwork support and input into our work at Glenfalloch Estate: Reuben Brown, Alex Caraffi, Cameron Cosgrove, Falcon Frost, Euan Ferguson, David Lowes, Kate Massey, Julie Murray, Dave Pullan and Robert Potter. We are grateful to Jim Dickson, Val Wilson and Zul Bhatia who kindly provided valuable data and insight to the spread of Nuthatches in adjacent areas.

References

Broadbent, I. & Scott, H. 2021. The arrival and subsequent first confirmed breeding of Nuthatches in North-East Scotland. *Scottish Birds* 41: 32–34.

Forrester, R.W., Andrews, I.J., McInerny, C.J., Murray, R.D., McGowan, R.Y., Zonfrillo, B., Betts, M.W, Jardine, D.C. & Grundy, D.S. (eds). 2007. *The Birds of Scotland*. The Scottish Ornithologists' Club (SOC), Aberlady.

Snow, D.W., Perrins, C.M., Gillmore, R., Hillcoat, B., Roselaar, C.S., Vincent, D., Wallace, D.I.M. & Wilson, M.G. (eds) 1998. *The Birds of the Western Palearctic*: Concise Edition. Oxford University Press.

The 2019 *Highland Bird Report* (2020). Highland Branch, Scottish Ornithologists' Club.

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Revised ms accepted April 2021

Gannet choked by a Lesser Spotted Dogfish

As bottom feeders, dogfish (Squaliformes) are not a natural part of the diet of Gannets *Morus bassanus*; indeed, Nelson (2002) specifically remarked that *Squalus* spp. are not eaten. However, in 2014 Quigley and O'Flynn documented a case in which a fresh Gannet carcass was found on the Irish Sea coast with a Lesser Spotted Dogfish *Scyliorhinus canicula* protruding from its open gape, having apparently choked in an attempt to swallow the fish. The authors argued convincingly that the dogfish was likely discarded by-catch (the dogfish in question being one of the most common species thrown back) rather than a previously undocumented component of Gannet diet.

On the morning of 21 May 2021, JCM found a fresh Gannet carcass on the rocky western end of Ardalanish Beach on the Isle of Mull, Argyll. A Lesser Spotted Dogfish was firmly lodged in the bird's mouth, and several

Plate 213. Dead Gannet with firmly lodged Lesser Spotted Dogfish, Ardalanish Beach, Isle of Mull, Argyll, 21 May 2021. © *José Clavijo M.*

attempts to remove the fish proved unsuccessful. As in the Irish record, the Gannet was assumed to have choked on the dogfish. Neither bird nor fish showed signs of decomposition, nor obvious signs of damage from scavengers. JCM shared the photograph with CJS. During the ensuing literature and Internet search, JCM discovered that two days later, on 23 May, Ian Carter had documented the same bird on Ardalanish Beach in a social media post (Carter 2021), with the bird and fish still in good condition. A response to Carter's message included a reference to the previous incident (Quigley & O'Flynn 2014). This is only the second published record of a Gannet attempting to predate a dogfish, and likewise the second recorded instance of choking on Lesser Spotted Dogfish.

Although seabirds are generally selective in their consumption of discarded benthic fauna, preferring easily-swallowed fish species (Furness *et al.* 2007), in scavenging offal from trawlers 'Gannets lose all caution, and swallow everything that comes their way, including bread, rubbish, and anything that glints like a fish', including objects that prove fatal, such as a 60 cm (2 ft) brass welding rod, and a long loop of iron wire taken from Gannets that had sickened and died (Nelson 2002).

References

Carter, I. 2021. Cause of death: 'choked on shark' or 'swallowed by gannet', depending on where your sympathies lie. Tweet URL twitter.com/IanCarter67/status/1396337483353309192, sent 23 May 2021, 0729 GMT.

Furness, R.W., Edwards, A.E. & Oro, D. 2007. Influence of management practices and scavenging seabirds on availability of fisheries discards to benthic scavengers. *Marine Ecology Progress Series* 350: 235–244.

Nelson, B. 2002. The Atlantic Gannet. 2nd edition. Fenix Books, Great Yarmouth.

Quigley, D.T.G. & O'Flynn, E. 2014. Gannet *Morus bassanus* (L.) choked by Lesser Spotted Dogfish *Scyliorhinus canicula* (L.). *Irish Birds* 10: 124–126.

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Revised ms accepted June 2021

CORRECTIONS

Scottish Birds 41(3) September 2021

Page 208: The y axis of Figure 3 is incorrectly labelled '0, 50, 100, 150', it should read '0, 200, 400, 600'.

Page 213: Within Figure 1, 'Eden Estuary' is misspelt.

Page 215: The y axis of Figure 4 is incorrectly labelled 'Number of birds', it should read 'Percentage of birds'.

Plate 214. The resident male Golden Eagle in the home range in North-East Scotland, January 2018. © *Alastair Pout*

The recent history of Golden Eagles in a North-East Scotland home range

Introduction

Golden Eagle home ranges in North-East Scotland are known to be among the most productive in terms of fledged young per pair (Watson *et al.* 1992, Eaton *et al.* 2007, Hayhow *et al.* 2017). However, these ranges have low occupancy rates and the eagles that are found in them demonstrate the demographic characteristics of sink populations (Whitfield *et al.* 2004). As a consequence, these home ranges fail the tests of favourable conservation status set out in Whitfield *et al.* (2008). The Golden Eagle ranges in North-East Scotland have been systematically monitored by the North-East Scotland Raptor Study Group (NESRSG) since the group's formation in 1981, and for many ranges the known history goes back much further. Here we use observational data from year-round monitoring, breeding records, and location data from satellite-tagged eagles to relate the 40-year history of one range and the eagles that have occupied it.

Chronology

2020: In the spring of 2020, the known eyries in the home range were checked for occupancy and signs of breeding. In the south of the range in a steep-sided glen, in an isolated Scots pine, a female Golden Eagle was found incubating and drifting overhead the male of the pair kept watch on the area. This Scots pine was the favoured eyrie in the range; it was a large structure of sticks and heather stems that had been built up and added to by many eagles over the years. It had been checked in January, but then no fresh material had been added, there were no signs of recent eagle activity, and no eagles had been seen. To find a female incubating in April was therefore a pleasant surprise. Over the course of the season the progress of the breeding attempt was monitored, one young hatched and grew well, fed mainly on Mountain Hare and Red Grouse, and by mid-July it had fledged. The adults' plumage, particularly the extent of retained white

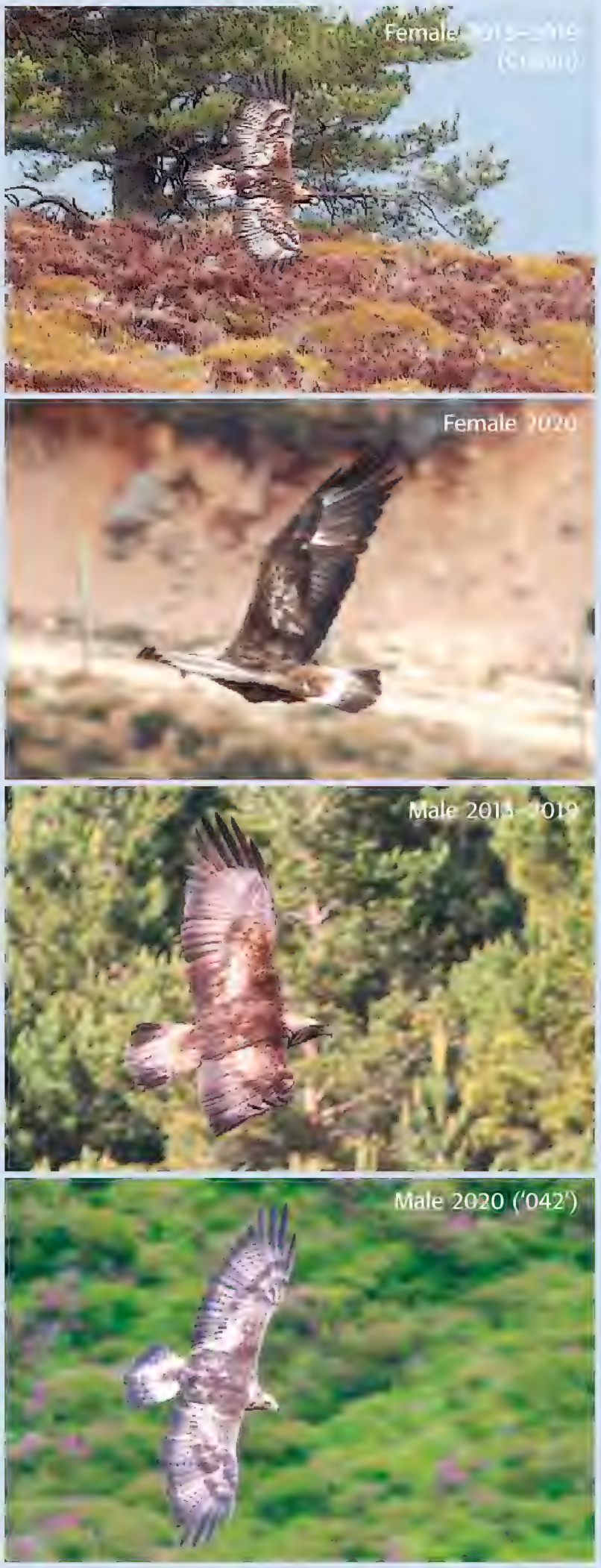

Plate 215. Tail patterns of 2013–2019 residents and 2020 residents, with clear differences in the extent of older, more mottled feathers and younger sub-adult feathers with a broad white sub-terminal band. The 2020 male is '042', fledged in 2014. © *Alastair Pout*

tail-feathers, indicated that both birds were comparatively young (Bloom & Clark 2001) and also that both were new to the range (Plate 215). Photographs from a trail camera set up later in the season by a nearby crag established that the male was ringed, he was '042' a bird that had fledged in 2014 from an adjacent home range. He was therefore six years old. The female looked younger, with many dark chocolate-coloured body feathers. That there was a new young pair of eagles in this home range, however, raised the question of what had happened to the previous pair?

2010–2012: What is known of those eagles dates back to June 2010 when a female from a brood of two at a Speyside eyrie was satellite-tagged by the Highland Wildlife Foundation. The eaglet was named Cullen. Her tag data indicated that after fledging she stayed close to her natal area for much of 2010 before dispersing. In 2011 and 2012 she was recorded over large areas of central and eastern Scotland, spending time in the Monadh Liath, Glen Fiddich, the Ladder Hills, the Angus Glens and Aberdeenshire [1]. By autumn 2012, Cullen had become increasingly settled, her activity largely confined to the known home range.

2013: By early spring 2013, the positions recorded by Cullen's tag were around the known eyries and roost sites in the core areas of the range, in upland prey-rich areas, and along prominent ridgelines west and south of the core areas. In total she was utilising an area of some 70km^2. In early April she was found incubating in the most well-used eyrie in the range, the same as was to be used in 2020. She remained on the nest until 12 May when she roosted away from the eyrie in native Scots pine woodland in the north of the range. Her single egg had failed to hatch (Plate 216). Nevertheless, that Cullen had paired-up and was breeding at three years of age was notable. Her mate was in adult plumage. Over the summer Cullen's tag signals became intermittent, ceasing altogether in June.

2014: In 2014, early checks of known eyries indicated no imminent breeding, sticks had been added to the tree eyrie and a cup formed but no fresh material was present. Moulted feathers and prey remains indicated the home

Plate 216. Cullen's single egg in the old Scots Pine eyrie April 2013. © *Alastair Pout*

Plate 217. The dropped satellite-tag April 2014. © *Alastair Pout*

range was still occupied and the pair were seen mating in March although some distance from any eyrie. In April, the satellite-tag was found under a favoured roosting-tree in the old pinewoods; the straps had abraded away as designed, and it had fallen from Cullen's back (Plate 217). Later, the pair were observed with a sub-adult Golden Eagle, and a sub-adult White-tailed Eagle was also present in the range from April onwards. Further checks of the known eyries, and searches for likely new sites, revealed no nesting attempt in 2014.

2015: Early in 2015 the eagles were observed around their traditional eyries and checks found that material had been added to the cliff eyrie and a rudimentary grass-lined cup formed. By mid-April though there had been no further progress on this nest, and Cullen and her mate were increasingly being seen together around old pinewoods in the north of the range. Here, in early June with the help of the local estate, a new eyrie was eventually located containing a well-grown chick. The pair had constructed a new nest, hatched eggs, and fed a chick virtually undetected until then. The young eagle, a female, fledged in late July and remained close to the nesting area into September (Plate 218). The one caveat was that part of the nest had slipped out of the tree just before the youngster fledged. The eagles had built this new eyrie on the contorted branch growth caused by a gall and the weight of the nest, which may have been started in 2014, had caused one of the supporting branches to break. In the winter, NESRSG members strengthened the remaining structure, and built a more robust alternative 'eyrie' close by.

Plate 218. The fledged female eagle, September 2015. © *Alastair Pout*

2016: The 2016 nesting season was a mystery. There was no activity in the old pinewood and in February the pair were observed close to the Scots pine eyrie used in 2013, to which fresh material had been added. By early April this eyrie had been well made-up and contained a nest of fresh pine sprigs with eagle down around the cup, but it was empty (Plate 219). Scuff marks on the trunk suggested the tree might have been climbed. If there was a clutch was not known. Subsequently, the new eyrie in the pinewoods, and the cliff eyrie, both had material added. A trail camera set up beside a well-used perch recorded the pair mating at the end of April, well beyond the normal date for egg laying (Plate 220).

Plate 219. The made-up but empty nest in April 2016. © *Alastair Pout*

2017: In 2017 the eagles returned to the pinewood and, ignoring the man-made alternative, they freshened up the nest used in 2015. Cullen spent increasingly long periods at the nest as the season progressed and by 24 March incubation had started. The male could often be spotted strategically perched with good views of the area, but he also took turns incubating, with several changeovers observed. On 3 May the white head of a newly-hatched chick was seen, and a week later it was clear there were two chicks, though no sibling aggression was observed and both eaglets grew steadily (Plate 221a). On the morning of 11 June, however, the eyrie was found under the tree, the collapse caused by recent heavy rain

Plate 220. Cullen and mate at a nearby crag prior to mating, April 2016. © *Alastair Pout*

Plate 221. a) Cullen with the two young on the original nest, 26 May 2017. b) Early morning 11 June 2017, the surviving chick found after the nest collapse with food left by the adults. c) Early afternoon 11 June 2017, hoisting the chick up to the replacement nest built in an adjacent tree. d) Late afternoon 11 June 2017, Cullen and chick on the replacement nest. © *Alastair Pout*

adding extra weight to the huge nest. The chicks had been on the ground for probably a day or so, one had severe head injuries and was barely moving,[a] but the adults had left food by the uninjured chick (Plate 221b). A small team from NESRSG quickly arrived, reconstructed the fallen nest in an adjacent tree, and returned the surviving chick to this replacement nest (Plate 221c). Soon after, the male dropped briefly onto this new nest to leave food, and then Cullen, having spent nearly an hour circling overhead, also landed and proceeded to feed and watch over her remaining youngster (Plate 221d). This chick fledged successfully by 16 July, and was still in the range on 22 December, gamely trying to catch Fieldfares around a holly tree.

2018: In early 2018 it was clear the eagles were preparing for the breeding season and evidently quite happy to reuse the emergency nest built in 2017, to which they had added fresh material. Incubation had started by 21 March, the first chick was seen on 30 April, and a second by 12 May. The season progressed without incident, and the two young, both females, fledged during July. Again, they remained in the area for

[a] This injured chick was taken into SSPCA care but later died.

Plate 222. The pair in July 2018, the male (left) and Cullen (right). © *Alastair Pout*

some time, one of the youngsters being seen in October following behind the adult male as he hunted in the upland areas of the range.

2019: On 31 December 2018 Cullen was seen soaring over the old pinewoods carrying a large branch in her talons (Plate 223). She disappeared into the wood with it, then made three further quick trips, each time bringing a new branch. Checks indicated none of the known eyries had been built-up, and further watches in February provided tantalising clues as to exactly where this new nest was. However, careful searches revealed nothing, and the eagle's breeding activity petered out during April, with the pair spending more time over the uplands and only entering the old pinewoods late in the day to roost. On 18 June they were observed soaring together; Cullen, with her distinctive pale plumage, had moulted a primary on each wing. She perched in a Scots pine, and remained there preening. There were to be no more eagle sightings in 2019, save for a distant adult in August, and an immature bird with a broad white tail seen in November. Searching through the pinewood in April 2020, the fate of the 2019 season was finally solved: a large upended nest was found beneath a tall Scots pine and under all the sticks were the broken shells of two eggs. Some of the nest had remained in the tree; like her first nest, Cullen had again built on the contorted growth of a Scots pine gall, and like her first, this nest had also slipped out of the tree. The 2019 breeding attempt had failed at the egg stage, and the eagles that had made the nest had now disappeared.

Plate 223. Cullen gathering nesting material, 31 December 2018. © *Alastair Pout*

Discussion

In the course of her life Cullen made six breeding attempts; one failed under unknown circumstances, two failed at the egg stage, and three were successful. She and her mate raised four young to fledging. She also skipped a year's breeding after her first attempt as a three-year-old. The pair built two new nests in an established home range, having failed twice when using the traditional main eyrie. Both these new nests fell out of their respective trees, one twice, resulting in the death of one eaglet and the loss of one clutch. Cullen disappeared in her tenth year, along with her mate. These events perhaps say something about current pressures on Golden Eagles in North-East Scotland.

The natural features of the home range span the watershed of two valleys and include areas of blanket bog, upland heather moorland, and relic native Scots pine woodland; all areas utilised by the eagles, as Cullen's tag data showed. The monitoring of the Golden Eagles in this range has a long history: it was known to Seton Gordon in the early 1900s, and visited by Adam Watson and others from the early 1960s. A chick fledged in 1963, but despite the continuous occupation by adult eagles breeding success was elusive. The prevailing view was that gamekeepers were removing any eggs laid (Adam Watson, 2012 *in litt*). Following the establishment of the NESRSG in 1981 monitoring became more formalised. Thereafter, the eagles occupying the range bred successfully in 19 of the 25 years from 1981 to 2005. Three eyries, all situated in the same glen, were used in that time, and 31 eaglets fledged, 12 twins and 7 singles, making the range among the most productive in North-East Scotland (Plates 224 & 225, Table 1).

Plate 224. The 1983 eaglet close to fledging. © *Sandy Payne*

Plate 225. The 2005 brood, the last successful nest in this eyrie for 15 years. © *Alastair Pout*

Table 1. Golden Eagle breeding history in the home range 1981–2020 (Eyrie codes: T, B, C, are the traditional eyries; tree, bank, and cliff respectively. Those built in the pinewood are W, W2 and W3; W2 was the emergency replacement nest. Fresh material added to a nest is signified by "m". M, F, ad, imm are for male, female, adult, immature).

Year	Occupancy	Eyrie Used	Clutch	Young Fledged	Comments
1981	pair	T	✓	0	Clutch adjudged to have been robbed.
1982	pair	T	2	0	Clutch adjudged to have been robbed.
1983	pair	B	✓	1	
1984	pair	C	✓	0	Nest collapsed and young died (after very heavy rain).
1985	pair	B	1	1	
1986	pair + imm F	T	2	2	
1987	pair	T	2	2	
1988	pair	T	2	2	
1989	pair	T	✓	2	Wren nest, clutch of five, in eyrie side.
1990	pair	C	2	0	Young strongly suspected of being taken by unlicensed falconers.
1991	pair	T	2	2	RSPB installed a surveillance camera after discussion with estate.
1992	pair	T	2	0	Clutch deserted, suspect disturbance by unlicensed photographer.
1993	pair	T	✓	1	
1994	pair	C	✓	2	
1995	pair	T	✓	2	
1996	pair	T	✓	2	
1997	pair	C	✓	2	
1998	pair	T	✓	2	
1999	pair	T	✓	1	
2000	pair	T	✓	1	
2001	> 1 eagle	T m			Non-breeding, early visits curtailed by Foot and Mouth restrictions.
2002	pair	T	✓	2	
2003	pair	T	✓	1	
2004	pair	C	✓	1	Chick reared from 'new' rudimentary nest on ground after falling out of eyrie. Estate to the west changes hands.
2005	pair	T	✓	2	
2006	pair (ad M, imm F)				Non-breeding (adult F now presumed dead). New shooting tenants in estate to the south.
2007	pair (ad M, imm F)	T	1	0	Single egg did not hatch, track construction from December.
2008	pair (ad M, imm F)	T m			Well made-up nest, track construction ~ 300m from eyrie by 8 May.
2009	imm pair + 2nd imm F	T m	?		Eagle photographed on the nest April, empty May. Immature M territorial towards second immature F (adult M presumed dead). Muirburn opposite nest in spring. Satellite tagged female Alma present from April onwards, poisoned on estate to west on 13th July.
2010	> 1 imm	T m			Well made-up nest, muirburn April, track extended, fence put in.
2011	imm pair	T m			Well made-up nest, sub-adult pair copulating on 17 April.
2012	un-aged pair, F Cullen	T m			Remains of sub-adult found close to eyrie in February. Well made-up nest and un-aged pair seen displaying April, Satellite tagged sub-adult illegally trapped on western side of range in April. Cullen present from late summer. Satellite tagged male Angus 33 in range September and October.
2013	pair (F Cullen)	T	1	0	Egg failed to hatch, incubation until mid May.
2014	pair (F Cullen)				Pair seen regularly including mating in March but no eyries freshened up.
2015	pair (F Cullen)	W	✓	1	New eyrie in pinewoods, partial nest collapse close to fledging.
2016	pair (F Cullen)	Tm	?	0	Tree eyrie well made-up. Tree possibly climbed. Pair copulating 30 April. Other eyries had material added later in season.
2017	pair (F Cullen)	W+W2	✓	1	Nest collapse, 1 young died, replacement nest built.
2018	pair (F Cullen)	W2	✓	2	
2019	pair (F Cullen)	W3	2	0	New eyrie, nest collapse, clutch lost. Resident pair disappeared later in season.
2020	new pair M "042" + F	T	✓	1	

However, 2006 proved to be another turning point. There was no breeding that year and one of the eagles present was in sub-adult plumage. In 2007 an immature female laid a single egg which failed to hatch. In 2008 the tree eyrie contained a well made-up but empty nest. In 2009, a sub-adult was observed sitting in the tree eyrie on 30 April, but a follow-up visit on 10 May found the nest empty. Checks in 2010 and 2011 found sub-adult eagles in residence, with the tree eyrie well made-up, but in both years lacking eggs. In February 2012, a dead eagle was found near one of the eyries (Plate 226). A post-mortem examination found it was a sub-adult, but was inconclusive as to the cause of death. By the spring of 2012 the range was occupied by an un-aged pair, with the tree eyrie well made-up but empty. In all these years, the alternative eyries had been checked, and other potential breeding areas visited. The range Cullen occupied in late 2012 therefore was one that had seen a succession of sub-adults and from which no young had fledged in the preceding seven years (Table 1).

This period coincided with notable changes in the local land management. The eagle's range encompasses land managed by five different estates. In 2004 the estate on the west of the eagle's range had changed hands and a programme of intensified land management aimed at 'restoring' the estate to a viable moor for driven Red Grouse shooting ensued. The work included a substantial increase in the extent and frequency of muirburn, the construction of new hill tracks, an increase in predator control, and the installation of electric fencing and metal gates along the estate boundary, all work espoused in an article published in the Scottish Land & Estates official magazine (Anon 2010). On another of the estates, this to the south, the sporting rights were let on a long-term lease in 2006. One consequence of this was that in late 2007 construction began of a hill track into the remote glen containing the three traditional eyries. The statutory agencies were not consulted and by May 2008 a tracked excavator was working 300 m from the tree eyrie (Plate 227). The eyrie location had long been known to estate staff and a police investigation for reckless disturbance ensued. This was discontinued some months later because, although there was a well-made-up nest, this was deemed insufficient evidence of breeding. The effect of the track's construction on the river catchment of a Special Area of Conservation was also sufficiently concerning to prompt the involvement of SEPA (NEMT 2013). The new track nevertheless enabled easy vehicle access to areas that previously could only be reached on foot. Muirburn was undertaken on slopes opposite the eyries in the spring of 2009. In 2010 there was further muirburn, more track work, and the erection of a deer fence. Larsen traps and snares have appeared, and most recently Red-legged Partridge release pens have been built on the moorland to the south. Another of the estates has undertaken muirburn close to the eyries, and in March 2016 organised a fox hunt along the adjacent slopes. The use of bird-scaring banger ropes and gas guns has in recent years become close to ubiquitous on all the estates. These devices are designed to scare pigeons from arable crops, yet they are being sited in the uplands in the spring and are audible for miles.

Plate 226. Remains of a sub-adult Golden Eagle found in February 2012. © *Alastair Pout*

Plate 227. Hill track construction by a tracked excavator in May 2008 past the eyries on opposite side of the glen. © *Alastair Pout*

In addition to intensive management to develop Red Grouse shooting, in 2018 plans were submitted by a wind-energy development company for a 28-turbine windfarm on a 1,457 ha upland site on one of the estates. The turbines would be 150 m high, and the closest just over 6 km from the eyries, well within the utilised range recorded by Cullen's tag data. The presence of any Schedule 1 species within an 8 km radius of the proposed development is deemed a 'significant feature'. Hence the impact on Golden Eagles was considered as part of the environmental impact assessment commissioned by the developers. This used a five-year time-window to access historic breeding raptor data, and conducted a breeding raptor survey of the area (undertaken in 2016). The collision risk to individual eagles was modelled using data collected during vantage point surveys. On that basis the impact on the Golden Eagle population was originally deemed 'non-significant' at both 'regional' and 'national' scale. The planning process has, however, required various revisions and updates to be made to the impact assessment, and as of 2021, the application remains under consideration.

Faced with all these pressures, the Schedule A1 designation afforded Golden Eagles and their nest sites seems to offer little protection. Disturbance legislation does not appear to have a deterrent effect and the burden of proof required for successful prosecutions is high. The construction of hill tracks does not require planning permission if it can be shown they are for 'agricultural purposes'. Muirburn is covered by best practice guidance, the 'Muirburn Code', but this has not prevented burning close to eyries in the critical early spring period for Golden Eagles. The use of bird bangers appears completely unregulated. At the wider landscape scale, designations such as Special Landscape Areas, or the controls of local development planning, or the EU Birds and Habitats directives (however now reincarnated into UK law) evidently do not deter specialist development companies from seeking planning permission to build in these areas, to the benefit of themselves and the landowners. If anything, in as much as it constrains activities in the uplands, the Schedule A1 designation would appear to offer every incentive simply not to have Golden Eagles in the landscape.

In the nine seasons from 2006–2014 there was no successful breeding in the range. In seven of those seasons nests were started in the tree eyrie, but failed to progress for whatever reason. Only twice was it known that a clutch was actually laid. The tree eyrie was seemingly used again in 2016, but again the breeding attempt failed. The exact reasons for these repeated failures are not known; it may be that the sub-adults were too young to lay eggs, although the succession of so many sub-adults in the range is in itself telling. It may be that levels of activity, facilitated by the new hill track, were incompatible with successful breeding. Deliberate disturbance or egg removal cannot be discounted. Whatever the exact causes, the contrast with pre-2006 is marked. It is tempting to surmise that Cullen and her mate were successful in the pinewoods because this was a more secluded area and a less well-known site. It is possible too, though speculation, that the eagles moved into the pinewoods because of their unsuccessful experiences when using the traditional eyries. Whatever the reason, that both their new nests fell from their respective trees suggests that finding suitable sites, and building new secure structures, is not without risk. New nest building is cited only rarely in the literature (e.g. Walker 2017), the longevity and habitual use of traditional eyries being a feature of Golden Eagle ecology that underpins much research and monitoring.

The chances both Cullen and her mate, the resident adults in the home range, died of natural causes in late 2019 is vanishingly small. Golden Eagles can live for over 30 years [2] and the recent report into the fate of satellite-tagged Golden Eagles (Whitfield & Fielding 2017) estimates that, in the absence of persecution, the annual survival rate of young eagles is 0.95 (CI 0.908–0.991). The adult survival rate is likely to be higher. On that basis, an albeit crude estimate of the chance that both eagles died in the same year is something around a quarter of one percent.[b] For adult Golden Eagles to have moved elsewhere, abandoning the range they had occupied for the previous seven years, would be an explanation at odds with all the evidence on site fidelity (Watson 2010, Walker 2017). Sadly, the most likely fate of these eagles is that they died through acts of illegal persecution.

[b] 1–0.95 * 1–0.95 = 0.0025 = 0.25%

Evidence of such acts has come to light with grim and unsettling regularity. In 2009, the satellite-tagged Golden Eagle Alma had been recorded in the home range from April onwards [3]. She was active around the traditional eyries and on the higher ground to the west, from where on 13 July 2009 Alma's body was recovered. She had been poisoned [4]. In May 2012, another young satellite-tagged Golden Eagle was recovered, this one had two broken legs consistent with having been caught in a spring trap. The tag data revealed that this eagle had been on the western periphery of the home range from the 28 to 30 April. From where, after not moving for 15 hours, it made an inexplicable 15 km overnight journey circumventing the home range, to be dumped, still alive, beside a public road. It was found dead a few days later (RSPB 2012). Neither of these blatant acts of illegal persecution have resulted in prosecution. What is more, these birds are just two of 46 young eagles, approximately 35% of all those that had been fitted with satellite tags, which are known or considered to have met an unnatural end, clustered in a few sink areas (Whitfield & Fielding 2017). Cullen is in that report, she is tag number 21197, and she was one of the lucky ones in that she at least survived longer than her tag.

So, in many ways the history of Cullen and her mate is indicative of problems facing Golden Eagles on the managed moorlands of North-East Scotland: the encroachment of human activities into upland habitats, pressures of development, land management inimical to the lifestyle and needs of Golden Eagles, ineffective or potentially counterproductive legal protection, and levels of direct human persecution that can only be guessed at, but which manifest themselves in the disappearance of range-holding adults and their replacement by a succession of young sub-adults drawn into a vacant range to try their luck.

The new pair in 2020 (Plate 228) have managed to use the traditional Scots pine eyrie successfully and raised a chick to fledging, the first from this eyrie in 15 years. But it remains to be seen what the future holds for this home range and the latest eagles to occupy it, '042', and his young mate.

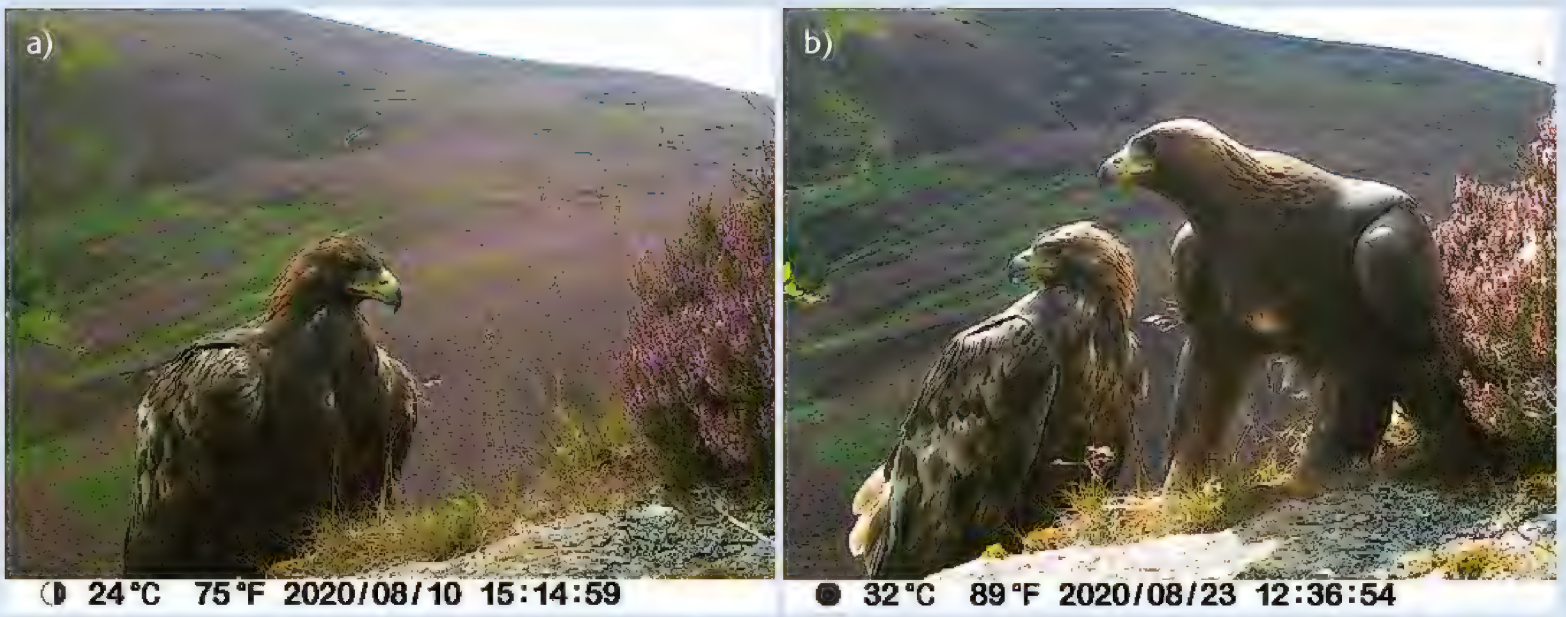

Plate 228. a) The new female eagle. b) The male eagle '042' and fledged chick, both August 2020. © *Alastair Pout*

Acknowledgements

We thank Roy Dennis for information derived from the satellite tagging. This narrative was only possible due to the contributions of many NESRSG members, particular thanks to Robert Rae, Stuart Rae, Ewan Weston, Sandy Payne, Brian Cosnette, Alistair Duncan and Logan Steele, and in an honorary capacity Robin Callander and Jim Mortimer. The estate where the eyries are situated are thanked for their help and continued support. All monitoring was carried out under Schedule 1 license.

References

Anon. 2010. Moorland lives again. Biodiversity section, *Land Business*, 36: 40.

Broom P.H. & Clark W.S. 2001. Molt and sequence of plumages of golden eagles and a technique for in-hand ageing. *North American Bird Bander*, 26:3, 97–116.

Eaton, M.A., Dillon, I.A., Stirling-Aird P.K. & Whitfield D.P. 2007. Status of Golden Eagle *Aquila chrysaetos* in Britain in 2003. *Bird Study*, 54:2, 212–220.

Hayhow, D.B., Benn, S. Stevenson, A., Stirling-Aird P.K. & Eaton, M.A. 2017. Status of Golden Eagle *Aquila chrysaetos* in Britain in 2015. *Bird Study*, 64:3, 281–294.

NEMT (North-east Mountain Trust) 2013. Examples of three damaging hill tracks from North-east Scotland. Autumn 2013: 4–10. http://www.nemt.org.uk/views/68/art02.htm

RSPB. 2012. Conservationists appalled by eagle death. http://ww2.rspb.org.uk/our-work/rspb-news/news/325140-conservationists-appalled-by-eagle-death Retrieved 26/1/2021

Walker D. 2017. *A fieldworker's guide to the Golden Eagle*. Whittles, Dunbeath.

Watson, J., Rae, S.E. & Stillman, R. 1992. Nesting density and breeding success of Golden Eagles in relation to food supply in Scotland. *Journal of Animal Ecology*, 61:3, 543–550.

Watson, J. 2010. *The Golden Eagle*. T. & A.D. Poyser, London.

Whitfield D.P., Fielding A.H., Mcleod D.R.A. & Haworth P.F. 2004. The effects of persecution on age of breeding and territory occupation in Golden Eagles in Scotland. *Biological Conservation*, 118:2, 249–259.

Whitfield D.P., Fielding A.H., McLeod, D.R. A. & Haworth P.F. 2008. *A conservation framework for Golden Eagles: implications for their conservation and management in Scotland.* SNH Commissioned Report No.193.

Whitfield, D.P. & Fielding, A.H. 2017. *Analyses of the fates of satellite tracked Golden Eagles in Scotland*. SNH Commissioned Report No. 982.

[1] https://www.roydennis.org/animals/raptors/golden-eagle/satellite-tracking/cullen-2010-present/ Retrieved 26/1/2021

[2] https://www.bbc.co.uk/news/uk-scotland-highlands-islands-45322932 Retrieved 26/1/2021

[3] https://www.roydennis.org/o/wp-content/uploads/2011/10/Alma-20091.pdf Retrieved 26/1/2021

[4] https://www.theguardian.com/environment/2009/jul/30/conservation-scotland Retrieved 26/1/2021

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NEWS AND NOTICES

New members

Ayrshire: Mr B. Baillie, Mr H. Fripp, **Borders:** Miss J. Chalmers, Mrs J. Chapman, Mrs G. Henderson, Dr K. Loudon, Ms P. Wheatley, **Central Scotland:** Mr & Mrs P. Hunt, Ms N. Ryrie, **Clyde:** Mr G. Brown, Mr D. Horsburgh, Mr & Mrs L. Illingworth, **Dumfries:** Mrs G. Frame, **England, Wales & NI:** Mr A. Barstow, Mr S. Dunstan, Dr M. Eaton, Mr N. Mackie, Mr D. Smith, **Fife:** Mr R. Augustin, Mr G. Harper, Dr J. Wilson, **Highland:** Mr J. Allan, Mr J. Newman, Miss A. Taylor, **Lothian:** Ms L. Alexander, Mr C. Allen, Ms J. Coull, Mr J. Eugster, Mr D. Field, Dr S. James, Mr D. Leslie, Ms S. Light & Mr P. Sykes, Prof S. Lindsay, Mr & Mrs A. Phillips, Dr G. Ross, Mrs K. Ross, Miss S. Rothman, Mrs F. Stark, Mr M. Stone, Mr J. Sturt, Mr F. Urwin, Mr S. Young, **Moray:** Mr P. Hopkinson, **North-East Scotland:** Mrs N. Allison, Mr A. Carroll, Mr J.K. Larsen, Mr J. Mayhew, **Orkney:** Mr M. Gamble, **Overseas:** Mr & Mrs J. Norris, **Tayside:** Ms A. Hood, Mr R. Stubbs.

Scottish Birdwatchers' Conference, 19 March 2022, Elgin Town Hall

We look forward to proceeding with an in-person event in Elgin, as planned and in accordance with any Scottish Government COVID-19 regulations that may be in place at the time. See programme and booking information enclosed or visit www.the-soc.org.uk/get-involved/scottish-birdwatchers-conference

SOC Annual Conference & AGM, 25–27 November 2022, Atholl Palace Hotel, Pitlochry

Programme and booking information is scheduled to be circulated with the June 2022 issue of *Scottish Birds*.

Remember your free digital *Scottish Birds*!

You should have already received an email from us with details of how to access your digital copy of this issue of the journal as well as your accumulated recent back issues. If you haven't received the email or are experiencing any issues with setting up or accessing your *Scottish Birds* Online account, please contact Kathryn Cox (admin@the-soc.org.uk).

Scottish Birds back issues

A complete archive of the journal, from volumes 1–39 and including indices, can be accessed via the SOC website: www.the-soc.org.uk/about-us/scottish-birds-soc-s-journal/past-issues

Waterston House update

Winter opening hours

Wednesday–Sunday 10:00 hrs to 16:00 hrs. Closed for the festive period (Saturday 25 December to 2 January inclusive).

Please check the SOC website for any updates to opening hours and facilities available when planning your visit: www.the-soc.org.uk/about-us/getting-here-opening-hours Admin staff can be reached Monday to Friday 09:00 hrs to 17:00 hrs and weekend staff 10:00 hrs to 16:00 hrs on 01875 871330.

Art Exhibitions

'Close to Home' showing until 9 January 2022 (closed for the festive period). Darren Woodhead's solo show records his experience over the past two years, immersing himself in the observation of wildlife and the rhythm of the natural world, and finding solace in this at a time when our world was in disarray.

Plate 229. Detail from 'Thrushes over Winter Hedgerow'. © *Darren Woodhead*

Plate 230. Winter Morning Loch Brora. © *Joan Baxter*

British Tapestry Group 12 January to 27 February 2022. This group exhibition of tapestry inspired by nature brings together the work of the Scottish members of the British Tapestry Group whose aim is to promote woven tapestry as a contemporary art form.

Artworks by the current exhibitors are available from the SOC Online Art Shop: www.the-soc.org.uk/online-shop

Scottish Birds Records Committee - new Chair

SBRC welcomes Mark Lewis as Chair, taking over from Mark Wilkinson from November 2021. Given Mark Lewis's role as SOC Birding and Science Officer, this opens up exciting new areas for the Committee to explore.

SBRC would like to acknowledge its gratitude to Mark Wilkinson for his work as Chair. Mark managed the work of the Committee extremely well and we wish him the best for the future.

Chris McInerny, on behalf of SBRC

For a full list of SBRC and other SOC committee members, visit: https://www.the-soc.org.uk/about-us/staff-committees-office-bearers

Branch Updates

No internet access, or email, get in touch?

If you are not online and would like to be kept informed of any ad hoc indoor meetings or field trips, please contact your local branch secretary (details on the inside back cover of the September issue).

Winter Talks Programme

Given that there was some uncertainty at the time of planning for the remainder of this year's winter talks (January to April) in terms of the rate of infections of coronavirus (and indeed, the flu) over the winter months, a decision was made to continue to offer a virtual-only programme, which you will find on your local branch page of the SOC website: www.the-soc.org.uk/local-branches Some branches may decide to organize additional 'pop-up' indoor meetings, which may take the form of an evening gathering with a local guest speaker or just a social get-together such as a coffee morning. Details of any such meetings will be circulated by email and published on the SOC website.

Outings

Several branches resumed their field trips during the autumn, making the most of the lifting of COVID-19 restrictions. Details will continue to be circulated to local members by email ahead of each outing as well as being published on the SOC website.

Plate 231. On the boat. © *Sue Seright*

SOC Highland Branch field trip

On 5 September about 40 SOC Highland Branch members and friends enjoyed a day pelagic trip out of Arisaig on MV Sheerwater (correct spelling!), organised by Bob McMillan. Typically, after a long benign spell, the weather had changed with overcast conditions and a freshening southerly. Nonetheless, the party enjoyed a great day exploring the waters off the Ardnamurchan peninsula and around Muck and Eigg. For many it was their first experience of 'chumming', trying to create an oily, fishy slick behind the boat to attract petrels and other seabirds. We enjoyed some success, with about six Storm Petrels on the Oberan Bank and a mixed bag of other seabirds including Arctic and Great Skuas.

Plate 232. Manx Shearwaters. © *Colin Leslie*

Conditions weren't ideal for cetaceans, but we did manage to see a pod of Harbour Porpoise and a Minke Whale. The highlight, however, was a large Basking Shark which afforded us some terrific views (Peter Stronach's video of the Basking Shark: www.twitter.com/i/status/1434590097144524800).

A great day out for all, especially after the recent lockdown. Everyone did a lateral flow test before the trip, and masks were required inside the cabin. Thanks to Ronnie and the crew, and maybe next year we will bump into a rarity!

SOC support for the next edition of *The Birds of Moray and Nairn*

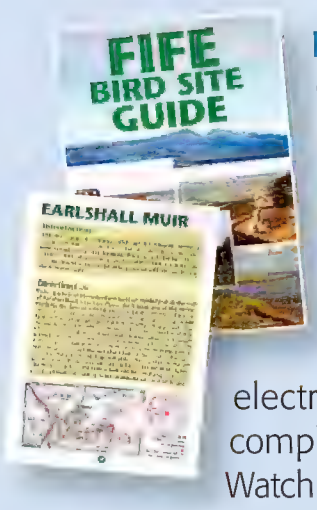
We are pleased to announce the latest publication to be awarded a grant from the SOC's Birds of Scotland Fund. An application for £5,000 to support the production of *The Birds of Moray and Nairn* was approved in July.

Birders generate a lot of information. On a yearly basis, this gets summarised in an annual report, offering a snapshot of the bird populations in the area for that year. However, bird populations change, and it can be extremely useful to document this as well, by bringing all of the information gathered over the years into one place - a local avifauna. Local avifaunas

complement whole-country equivalents such as *The Birds of Scotland* (Forrester et al, 2007). They offer a more in-depth look at local trends in distribution and abundance, in this case written by Martin Cook, an author who knows his area and its birds inside out.

With publication expected in late 2021 or early 2022, 30 years after the publication of the first edition, Martin returns with an updated version of this well-received work. The new book will feature a greatly expanded section of species accounts, collating information from the original with data collected since its publication in 1992. These accounts will summarise what is known about the abundance and distribution of every species known to have occurred in Moray and Nairn. In addition, this new version will include a detailed site guide, helping birders to access the best sites and connect with the species they most want to see. While this book may primarily be aimed towards more local birders, information on finding Scottish specialities will make it invaluable to visiting birders too.

For more information about The Birds of Scotland Fund, including a list of publications and projects supported to date, visit www.the-soc.org.uk/about-us/publications/the-birds-of-scotland-fund



Fife Bird Site Guide

Congratulations to the editorial team at Fife Bird Club for their comprehensive guide to birds in the Kingdom, published in September. The guide works well for anyone who likes a printed rather than an electronic resource, and it complements the SOC's Where to Watch Birds in Scotland mobile app in that it introduces some sites that are a bit less well known. At the time of writing, the publication was virtually sold out. However, a copy is available in the SOC Library.

Bird Reports

Borders Bird Report No. 37 (2020)

The 240-page report, published in September, covers summaries of the 216 species recorded in the Scottish Borders during the year. There are also small accounts on the sighting of a Montagu's Harrier - only the fifth record since 1911, and also of the record-breaking counts of Sooty Shearwaters in September. There is also a full account for the year of ringing in the region. The Report is illustrated with colour photographs taken by local birders and is generously supported by graphs depicting trends of species records in recent years, as well as tetrad maps for selected species.

The report is available to download in PDF format from the Borders bird recording page of the SOC website: www.the-soc.org.uk/bird-recording/local-recorders-network/areas/borders.

Printed copies are priced at £10 each (plus p&p). Please contact Malcolm Ross in the first instance, to check availability. Tel: 01896 755523 or Email: eliseandmalcolm@btinternet.com

Anyone downloading the digital version who is not purchasing a printed copy is asked to make a donation to the Borders branch (account details are on the web page) to help towards financing the report.

Lothian Bird Report 2019

The latest report was published in autumn 2021. It features 154 pages, packed with information and colour photos. Details are given for every species recorded in 2019, together with summaries for every species ever seen in Lothian. The report is priced at £10 and can be purchased from the SOC HQ at Waterston House in person during opening hours, and from the Viking Optical Centre at 101 Rose Street, Edinburgh (Please check availability at Viking before travelling 0131 225 6389).

For postal orders, please contact Gillian Herbert: Tel 0131 339 6479; Email: gillianiherbert @btinternet.com. Postage and packaging charges apply and details will be provided on enquiry along with payment information. Details can also be found on the SOC website: www.the-soc.org.uk/bird-recording/local-recorders-network/areas/lothian

Back issues are also available by post from Gillian. The 2018 report costs £5 plus p&p. Earlier reports cost £2 plus p&p. We have a large stock of old reports; please contact Gillian to confirm availability.

Council thanks all the SOC volunteers and members of other bird clubs and societies who carry out the often Herculean task of producing these regional annual reports. For a full list of current reports, visit www.the-soc.org.uk/bird-recording/bird-reports-atlases Copies of the majority of Local Bird Reports are available to purchase from Waterston House (in-store purchase only).

REQUESTS

Wintering Lesser Black-backed Gulls in Scotland: a request for information

Over the last six years, members of the Lothian and Tay Ringing Groups have colour-ringed Lesser Black-backed Gulls to determine whether 'our' birds, which belong to the light-mantled western race, still winter in Iberia and north-west Africa. So far, all re-sightings in winter (December, January, and February) have been in Portugal, Spain, Morocco and Mauritania, raising the question: where do dark-mantled Lesser Black-backed Gulls wintering in Scotland come from?

They may have come from further north and east. However, dark-mantled Lesser Black-backed Gulls breeding in the Faeroe Islands, Norway, Denmark and on the western coast of Sweden winter in Iberia and north-west Africa, and there are no ringing records of these birds in Scotland in winter.

Very dark-mantled birds breeding in the eastern Baltic, also known as Baltic Gulls, migrate south-eastwards and winter in the eastern Mediterranean, the Red Sea, the Arabian Gulf and particularly East Africa. There is one ringing record of a Baltic Gull in Scotland: a juvenile, colour-ringed in Finland in July 2018, was re-sighted in Tweedbank, Borders in February 2019.

So it is *possible* that dark-mantled Baltic Gulls winter in Scotland. However, field identification is very difficult and not conclusive. Another colour-ring sighting would be helpful. Please take a closer look at any Lesser Black-backed Gulls seen during the winter and check if they are colour-ringed. Colour-ringing details can be found on the cr-birding website (www.cr-birding.org). And if you see one, please let me know!

John C. Davies
Email: johncdavies@blueyonder.co.uk

Guillemots and Razorbills: what's going on?

There have been many reports of very close inshore views of Guillemots and Razorbills from up and down the Scottish east coast. Auks have also been spotted much further up rivers than expected, and many dead auks have been washed ashore. Juvenile auks will have left their natal cliffs in August and will still be learning fishing skills, so they are vulnerable to starvation at this time. However, all auks, adult and juvenile, are dependent on the supply and distribution of fish such as Sandeels and Herring around our coasts, and this is thus an important factor in their survival. It may be that climate change is affecting seawater temperature, meaning the fish are feeding in different areas, or overfishing may have decreased fish numbers. Certainly, the reasons for these unusual sightings need investigating. You can help - if you find a dead bird that is ringed, then please report it via the EURING website https://app.bto.org/euring/lang/pages/rings.jsp

Eds.

Plate 233. Work on creating the new wetland at Musselburgh means that pedestrian access will be restricted for over a year to allow heavy vehicles to pass, 2 November 2021. © *Ian Andrews*

New wetland being built at Musselburgh

The westernmost lagoon at Musselburgh (Lothian) has had a long and varied history, but now, 57 years after the seawall was built, its future as an integral part of the Firth of Forth Special Protection Area (SPA) (and SSSI and Ramsar site) is more secure than ever. Scottish Power started work on landscaping the site for a new wetland in late September 2021 (Plate 233) and it is hoped to be completed within 18 months.

The westernmost lagoon adjacent to the river mouth or 'first lagoon', as it is known by birders locally, was the last of the original lagoons to be infilled with ash from Cockenzie Power Station (in the mid-1980s) and before that it remained tidal. Like the other lagoons, its level was later raised as part of the plan to extend the life of the power station, and it remained an active lagoon until the power station ceased working in 2013. It subsequently became colonised by low vegetation and crisscrossed by dog walking paths - and its status as a wader roost lapsed.

The establishment of this new wetland has been a long time in gestation. It was first mooted in the 1990s and the original plans were approved in January 2002. The first lagoon was included (along with the scrapes) in the Firth of Forth SPA designation in October 2001 and this has proved crucial in pushing forward the establishment of this wetland. The area of this part of the SPA is 18.8 ha, of which 11.3 ha will be fenced off and the wetland will comprise 5.7 ha (Figure 1).

The new wetland will consist of two shallow water areas with islands which together will cover an area similar to the existing pools at the scrapes. The larger of the two new pools at 270 m by 140 m is twice the area of the westernmost scrape of the current Bird Reserve. It will be surrounded by fencing, scrub and a 4 m-wide moat, and there will be five viewing hides on a bund on the west, south and east sides of the pools. The hides will be of similar construction to those at the scrapes and will be the same distance (40–50 m) from

the water's edge. In addition, sheltered viewing benches will be rebuilt along the seawall.

As in the scrapes, water will be pumped from the Esk mouth to maintain water levels. The existing ash mound will be lowered, and landscaping will extend over the adjacent areas to the east.

The site's designation as an SPA is based on its importance as a wader roost and the primary aim of the new wetland is to replicate the roosting opportunities for waders, gulls and ducks that existed when the site was designated. The extra measures added to minimise disturbance are an important part of these new plans, especially in the light of the disturbance issues at the scrapes in recent years. Ground-nesting birds are also having a tough time at the lagoons. We have lost our breeding Ringed Plovers, Meadow Pipits and Grey Partridges (and Hares), and I fear Skylarks, Reed Buntings and others may not be far behind. The additional fenced area should benefit these species, and maybe access could be excluded from a larger area of the whole site using East Lothian Council's new Land Management Rules. Interestingly, 78% of those who responded to the consultation on these rules supported the principle of dog-free areas.

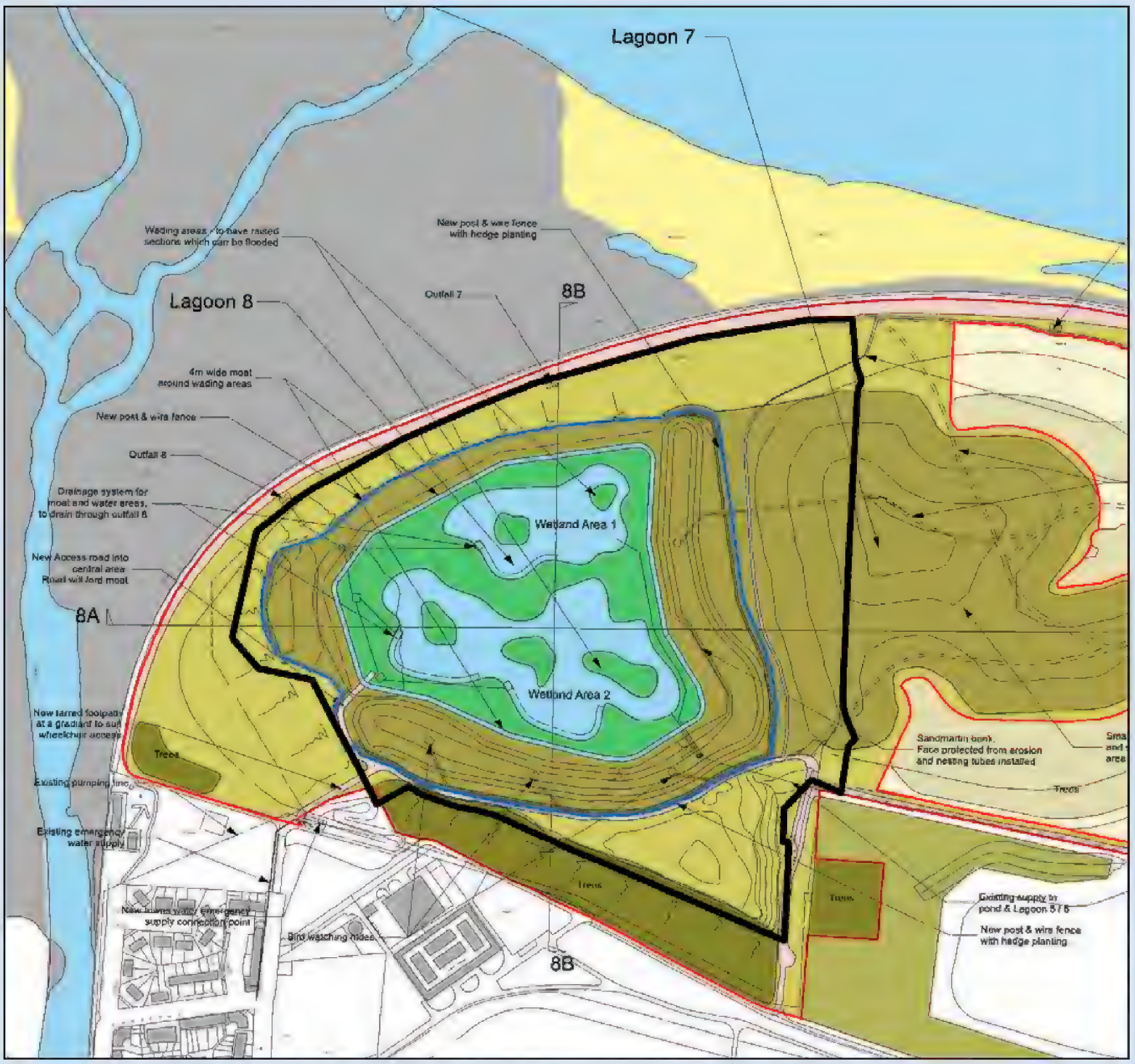

Lagoon 7
Wading areas - to have raised sections which can be flooded
New post & wire fence with hedge planting
Lagoon 8
Outfall 7
8B
4m wide moat around wading areas
New post & wire fence
Outfall 8
Drainage system for moat and water areas, to drain through outfall 8
Wetland Area 1
New Access road into central area Road will bord moat
8A
Wetland Area 2
New tarred footpath at a gradient to suit wheelchair access
Trees
Existing pumping line
Existing emergency water supply
Sandmartin bank. Face protected from erosion and nesting tubes installed
Trees
Trees
Trees
New burns water emergency supply connection point
Bird watching hides
8B
Existing supply to pond & Lagoon 8/8
New post & wire fence with hedge planting

Figure 1. Extract from Scottish Power's plans for the westernmost lagoon at Musselburgh as approved on 3 October 2018. In addition, the solid black line denotes the limit of the Special Protection Area (sitelink.nature.scot/site/8499) and the new fence line is highlighted by a blue line. As downloaded from East Lothian Council's website: pa.eastlothian.gov.uk Reference 18/00388/PM. Note: a fifth hide (not shown) will be situated to the west of the new wetland.

Work on the easternmost lagoon also forms part of the current work programme. The concept is to have a large, naturally developing area which will flood and create different local environments to encourage bird and insect life. Its success will depend on how disturbance is managed.

During the construction phase, access will be excluded from certain areas and visiting birders should be aware that their usual routes may be barred as lorries and earth-moving trucks use the seawall track.

On completion, Scottish Power will hand over the site to East Lothian Council who will manage it in conjunction with the wader scrapes. Maybe it is time for them to reconsider the designation of the site as a Local Nature Reserve that was so popular when the prospect was first raised some time ago?

We are entering an exciting new phase at Musselburgh lagoons as the wetland will undoubtedly add to the birding experience in addition to benefiting the birds. A well-trodden path may well be worn between the wetland and the scrapes as birders have to check both sites. I wonder which waders will decide to roost where, and what the first rarity will be? Thinking back, rarities on the first lagoon have included Kentish Plover, Ring-billed Gull, White-winged Black Tern and Desert Wheatear; and the Western Sandpiper also paid a visit in 1997.

Challenges remain - not least addressing the massive recent increase in disturbance across Fisherrow Sands where the birds that roost on the site try to feed. Any management plan needs to address the whole feeding-roosting cycle since there can't be one without the other.

Ian J. Andrews, Musselburgh.
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Apparent grief and site-fidelity in a Buzzard

Responding to travel restrictions imposed during the 2020 COVID-19 lockdown, I adopted a reclaimed landfill site near to the Edinburgh City Bypass as my birding patch. Covering *c.* 300 acres, it is mostly monoculture grassland bordered by woodland and a golf course, with a small tree-lined lake into which the site drains. In 2020 the site hosted two Buzzard pairs, one of which fledged young from the nest I found. I continued birding there during 2021, and until 28 April habitually recorded four, and sometimes five Buzzards. Adult Buzzards tolerate their young in the parental territories during the first winter, with usually just one juvenile remaining from the brood (Walls & Kenward 2020). Thanks to poor weather, the next visit was not until 11 May, when a single Buzzard pair was present. Approaching the previous year's nest, I noticed a broken hen's egg on the ground, *c.* 50 m away from which lay a decomposed adult Buzzard. Suspecting poisoning, I contacted the RSPB who in turn alerted Police Scotland.

On 20 May, I recorded the surviving pair of Buzzards, whose territory is *c.* 750 m from the site of the possible poisoning. The Buzzard carcass was still present, but there was no sign of its mate. Visiting next on 28 May, I initially recorded no Buzzards, but was not unduly concerned since birds often go quiet at this period in the breeding cycle. On approaching the previous year's nest, however, it was surprising first to hear a Buzzard's repeated alarm call, and then to see a solitary bird circling noisily over the area. Walking further, I found the desiccated corpse still *in situ*. The remaining Buzzard had by now flown off. On 4 June a Buzzard called briefly

when approached, and then flew from the tree containing the old nest. The remains of its mate still lay nearby. On 15 June, I was some distance from the dead Buzzard when, on hearing a Buzzard's alarm call, I saw a bird rising to circle over the corpse as a pair of Carrion Crows flew over it. The Buzzard then flew a short distance, landed in a tree and gave alarm calls for the next couple of minutes. Lively interaction between crows and perched and circling Buzzards is common in spring (Dare 2015). The bird was still vocal when I approached the old nest on 22 June, but for a much shorter period. On 1 July, a Buzzard was seen and heard calling consistently from a perch directly over what little now remained of the corpse. I moved away without disturbing the bird and continued surveying the patch. After this date, no further Buzzard activity was noted around that area until 21 September, when two Buzzards circled over the site, calling briefly. This is consistent with Buzzard behaviour on Dartmoor, where unsuccessful breeding adults usually dispersed from the breeding area before July (Tubbs 1974).

When interpreting the bird's prolonged agitation over several weeks following the loss of its mate, it is tempting to think anthropomorphically and ascribe the behaviour to what we would term grief. Birds have the same areas of the brain, hormones and neurotransmitters as humans (Cudmore 2015) and there are many instances when birds display reactions that could be analogous to grief: for example, Blackbirds screeching after their nest is plundered by a Magpie. I have experienced 'mourning' behaviour in Hen Harriers, observing a male flying repeatedly over the breeding territory as his lifeless mate lay in the heather beside the empty nest. However, the female harrier was not long dead, and site fidelity in raptors (e.g. falcons) is well-attested after the disappearance of a mate. Peregrines can soon team up again if one of the pair is lost. Buzzard pairs, however, are monogamous and enduring; should one die during the breeding cycle, the remaining bird generally does not pair up again until the following season (Cramp & Simmons 1980).

Rather than being a display of apparent grief, the behaviour of this singleton perhaps most resembles that of a male reacting towards an intruder at the breeding territory he may defend for his entire reproductive life (Prytherch 2009). It may also be significant that Buzzard pairs that lost eggs early in the season continued to defend their territories as vigorously as those breeding successfully (Tubbs 1974). Most Buzzard calls are directed at other Buzzards, but human encroachment on a nest site will also provoke a vocal reaction. Although distinguishing a solitary Buzzard's sex in the field is tantamount to impossible (Walls & Kenward 2020), it seems improbable the alarm calls were uttered by a female: hereabouts at the end of May she would still be on eggs or brooding small young. Throughout incubation and for three weeks after the young hatch she is normally provisioned by the male at or near the nest (Cramp & Simmons 1980). It appears unlikely, then, that even in ideal weather, never mind the appalling spring of 2021, she could both hunt for herself, brood her eggs, and watch for intruders. Even if this were so, however, the continuing presence, and noisy reactions, of a single bird suggest that at the height of the breeding season site fidelity in Buzzards is strong enough to outlast by several weeks the abrupt loss of a mate. Just how the Buzzard died remains unknown, since Police Scotland made no attempt to follow up on the original report of its suspicious death.

References

Cramp, S. & Simmons, K.E.L. (eds.) 1980. *The Birds of the Western Palearctic*. Volume 2. *Hawks to Bustards*. Oxford University Press, Oxford.

Cudmore, B. 2015. Do birds grieve? www.audubon.org/news/do-birds-grieve. Accessed 24 August 2021.

Dare, P. 2015. *The Life of Buzzards.* Whittles Publishing, Dunbeath.

Prytherch, R. 2009. The social behaviour of the Common Buzzard. *British Birds* 102: 247–273.

Tubbs, C.R. 1974. *The Buzzard.* David & Charles, Newton Abbot.

Walls, S. & Kenward, R. 2020. *The Common Buzzard*. T & A.D. Poyser, London.

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OBITUARIES

Dougal Graham Andrew W.S. (1926–2021)

Dougal was born on 19 May 1926 in Elgin, Morayshire. He initially attended schools in Aberdeen and Edinburgh before going to Uppingham School in Rutland where he first took an interest in birds. He gained a place at Cambridge University to study law, but after only a year opted for service with the Army and joined the XII Lancers in Palestine and Egypt. On his return from the Army, he went back to Cambridge to complete his law degree. For the rest of his working career he practised law in Edinburgh with Dundas & Wilson and subsequently with Morton Fraser.

Plate 234. Dougal Andrew, Gullane, Lothian, May 2009. © *John Nelder*

In 1950 there was a growing band of highly active young birdwatchers around Edinburgh who wanted their bird sightings published locally rather than in *The Scottish Naturalist* or *British Birds.* Prominent among them was Dougal, and thus was born the *Edinburgh Bird Bulletin*, the brainchild of Dougal and Stewart Kirkaldy. The first issue appeared on 30 November 1950 as the Journal of the Edinburgh branch of the SOC. Up to six parts were issued per year, and it continued to thrive for the next eight years under several other editors until succeeded by *Scottish Birds* in January 1959. On writing his final editorial, Andrew Macmillan records the substantial debt owed to Dougal, its joint founder and executive editor for the first five years. He had shaped and nurtured the magazine through its early years, making it one of the most respected journals of the period and leading to an almost identical publication, *The Glasgow and West of Scotland Bird Bulletin* produced by Dr Jack Gibson from 1952 until 1959.

Dougal was never a twitcher of rare birds, but was involved in the identification of two first records for Britain. Firstly, when friends Frank Hamilton and Keith Macgregor found an unfamiliar wader at Rosyth in September 1954, they puzzled over its identification. The following day they returned to the site with other observers, among them being Dougal armed with Peterson's *Field Guide to Birds of Eastern and Central North America.* This helped them to identify it as a Wilson's Phalarope, not only a first for Britain but the Western Palearctic. They celebrated by enjoying lunch at the Café Royal, Princes Street, Edinburgh (those were the days!). Less than three weeks later, with two friends, he found a stunning male Siberian Thrush on the Isle of May, which was trapped and ringed and stayed a few days.

Dougal's love of the Scottish Islands was inspired after reading Robert Atkinson's *Island Going* (1949). This led to a two week stay on St Kilda in July 1956, when he joined one of four expeditions organised that year by members of Cambridge/Edinburgh/Glasgow Universities to study its natural history post evacuation of the island in August 1930. Many years later, he chartered a converted trawler *Ocean Bounty* and arranged seven two-week voyages between 1989 and 1996. Landings included St

Kilda, The Flannan Isles, North Rona, Sula Sgeir, Mingulay and Barra Head. The invited party of nine changed over the years, but a few travelled on them all, including Prof Estlin Waters, David Wilson and Frank Spragge. Along with Ian Wallace, I was invited on three of the charters and will never forget the time spent on these remote islands with these experienced island goers and naturalists.

Ian Wallace, Dougal's long-standing friend from his days at Cambridge, highlighted two connections of interest. Firstly, Dougal had remained respectful of Col. Richard Meinertzhagen, despite his undesirable flaws. They had first met on Fair Isle in October 1962 and later at ornithological meetings in London, Cambridge and SOC conferences where they shared an interest in Middle East ornithology. Secondly, from *c.* 1962 to 1969 Dougal served on the BOU Records Committee which at that time included such luminaries as H.G. Alexander, P.A.D. Hollom, I.J. Ferguson-Lees and J. Ash. He alone wrote all the notes on bird distribution for Scotland from 1964 onwards, complementing the important BOU Status book published in 1971. Other notable services to Scottish ornithology included being a member and latterly chairman of the Scottish Birds Records Committee *c.* 1957–1971, and a trustee of Fair Isle Bird Observatory between *c.* 1959 and 1989.

My first contact with Dougal was through the SOC when we served on Council, where he had been Club Law Agent from between *c.* 1957 and 1986. He devoted much of his time and energy to the SOC, and his depth of knowledge, contacts and sound advice were well respected. He had a fine personal library, and made several very generous donations to what was to become the Waterston Library when the Club moved out of Regent Terrace into Waterston House. A subscriber to *British Birds* for at least 70 years, he had a complete bound run of this important journal.

Once retired, he particularly enjoyed his daily circuit of Muirfield Golf course with his dogs. I joined him on my many visits, when in the spring he located the Lesser Whitethroat territories; in the late autumn and winter we viewed the large flocks of Fieldfares feeding in the Sea Buckthorn.

What of the man? Dougal was a quiet, reserved gentleman with a deep knowledge of ornithology, widely read, and a lover of classical music, particularly opera. For most of his long life he kept a diary, and would stay up late each evening to type it up. The bound volumes adorned shelves in his study. Not surprisingly, he was a member of Muirfield Golf Club, living for many years in a lovely, listed house which directly bordered the course. He was married to Gratian, whom he first met in Edinburgh, and in recent years they had celebrated their Diamond Wedding anniversary. They had two sons and three granddaughters. Dougal passed away on 28 March after a period of slowly declining health. He will be sadly missed by his wife, family, wide circle of friends, and all who were fortunate enough to have enjoyed his company.

David Clugston

Eddie Maguire (1946–2021)

Eddie Maguire was one of the pioneers of modern-day Argyll birding, making detailed observations of visible migration and breaking new ground observing seabird passage in the West of Scotland.

Eddie was born in Glasgow in 1946 and had a difficult childhood. He was cruelly separated from his sibling when he was put into care. However, at this time his love of birds developed; he rejected sport, but was given the opportunity to learn about birds by one of his carers. Little else is known about his early life, since Eddie preferred to talk about birds. His love for these led to him getting a job in Perth Museum as a general assistant around the late 1960s and early 1970s, and there he was involved in the local birding scene.

In the early 1970s he moved to Campbeltown (the home of his then wife Patsy McCallum) and found work in the Machrihanish Air Base as a lorry driver with the RAF. He never moved away from the area which he loved, and became the leading ornithologist in Kintyre. Occasionally he would migrate south to the English Midlands for the music scene during the winter; he was accomplished on the twelve-string guitar and also played the mouth organ. His musical tastes were REM and U2, combined with a love of traditional folk music. His home venue was the Kilbrannan Inn in Campbeltown, which allowed him to combine his music, socialising with the local community, and birding. Though he was at times difficult to work with, his good humour and enthusiasm for birds was infectious and he worked closely with others, notably Rod Angus, John McGlynn, Iomhar McMillan and Rab Morton. He also helped inspire young ornithologists such as Neil Brown to find out more about Kintyre's birds. Over the half century he lived there he wrote up many of his studies, including three editions of 'The Birds of Kintyre', along with notes on the breeding performance of Buzzards, passage skuas and Balearic Shearwaters, identification of Grey and Red-necked Phalaropes, overland passage of Gannets, movements of Twite and most recently movements of Magpies.

Plate 235. Eddie Maguire, Machrihanish Seabird Observatory, October 2015. © *Rab Morton*

In the late 1970s, along with Rab Morton and others, he pioneered the use of tape lures to catch Storm Petrels on Sanda. The discovery that petrels could be attracted ashore using tape lures led to over 10,000 being ringed each year and to an understanding that many of these roaming birds are non-breeders. He helped construct a Heligoland trap at the Mull of Kintyre lighthouse in the late 1970s in order to ring migrants. Later, in September 1993, he established Machrihanish Seabird Observatory at Uisead Point, one of the best sea-watching locations in Scotland. Eddie also advised others in the early 1990s when they began to monitor the movements of seabirds past Frenchman's Rocks on Islay. During this period, he paid several visits to Islay with a group of musician friends, and they enjoyed some wonderful nights out in the Port Charlotte Hotel.

Many people were welcomed warmly at the Seabird Observatory by Eddie as he manned it most mornings (and often all day if there was a good passage) from March to November, thus providing not only valuable information on the passage of seabirds, but also spring and autumn movement of waders on the Mull of Kintyre. Sightings were diligently written up and published in annual reports which contain examples of his excellent photography (Eddie was an early adopter of digiscoping). These are available online: Machrihanish Seabird & Wildlife Observatory (machrihanishbird observatory.org.uk). Never a twitcher, Eddie was always keen to find his own birds and remained faithful to Kintyre. Over the years there he found no fewer than nine 'firsts' for Argyll (including Black-browed Albatross, Sooty and Whiskered Terns and Greenish Warbler).

Eddie was buried at Patchan Cemetery, overlooking the sea that he had watched over from the Seabird Observatory for over a quarter of a century. It was on a lovely warm July afternoon - warm enough for a Sooty Tern to drift by! He is survived by John, his son, and Brian, his brother, to whom our sympathies are extended. He will be greatly missed.

Prepared by members of the Argyll birding community

LETTERS

Bill Bourne

I read with interest David Jenkins' obituary of Bill Bourne (*Scottish Birds* 41:3 247–248). It is clear that Bill took a keen interest in seabirds worldwide, and was much involved with organisations that studied and recorded them. As I am currently preparing a book covering 40 years of the North Sea Bird Club (NSBC), I feel obliged to highlight the role played by Bill in the formation and operation of the Club in 1979 and the years immediately following.

Bill's connection with the University of Aberdeen and his friendship with NSBC founding fathers, SAM Alexander, Stan Howe and David Merrie (all in the oil industry then) meant he was well placed to provide input into how the Club might be set up and operate a recording system. Indeed, I have a black and white photo of Bill and Stan on an oil rig handing over a bird handbook to an offshore observer in about 1979!

David noted of Bill that "His views were freely given..." and I was certainly on the receiving end of some of those - usually a hand-written letter!

Andrew Thorpe, NSBC Recorder (1999–2019)

BOOK REVIEWS

The book reviews published in *Scottish Birds* reflect the views of the named reviewers and not those of the SOC. Compiled by Nick Picozzi.

Light Rains Sometimes Fall: A British Year in Japan's 72 Seasons. Lev Parikian, 2021. Elliott and Thompson Limited, London. ISBN: 978-1-78396-577-9, hard back, 336 pages, £14.99.

I shouldn't judge a book by its cover, but I do - and this book lives up to its joyful promise. In the temperate UK, we take for granted the idea of four seasons, but this does not truly reflect the gradual transition of one season into the next. The author introduces us to the fascinating Japanese concept of 72 micro seasons, each five to six days long, and he spends a year creating his own calendar based on observations in the middle of London.

The book includes the delightful Haiku-like names of each Japanese season - 'Crickets Chirp Around the Door' (18–22 October). The author watches and notes as the next defining moment of the year arrives - 'Woodpeckers Start Drumming' (19–23 February). His humour, which features throughout the book, is evident in many of his seasons' names - 'Sogginess Prevails' (23–27 October).

It reflects the joy of tuning into nature and observing it closely - the first snatch of a Robin's autumn song, or a growing awareness that there are many species of bumblebee if you care enough to look in detail. The book was written during the pandemic and resonates with those of us who also became highly attuned to our local patch during difficult times.

This is a book that can be dipped into, a reminder of the beauty that can be found in each season throughout the year, even in the dark depths of winter. Since reading it, I have found myself creating my own micro seasons and have bought a copy to help beat the January blues!

Kathryn Cox

What it's like to be a Bird. Tim Birkhead (author) & Catherine Rayner (illustrator), 2021. Bloomsbury Children's Books, Great Britain, ISBN 9781526604125, hardback, 48 pages, colour plates, £12.99.

Tim Birkhead's *Bird Sense: What it's like to be a bird* was first published by Bloomsbury in 2012. It was illustrated with detailed line drawings by Katerina van Grouw and received wide critical acclaim. The edition reviewed here has been revised (2021) for a young readership, this time with colour illustrations by artist Catherine Rayner who will be exhibiting at Waterston House next year. Tim is a brilliant science writer, and this is

Plate 236. Rory Wouters hard at work reviewing the book. © *Tina Wouters*

his first book for children; as such, has it been a success? I have a bird-mad 10-year old great nephew so I asked him if he would like to review it (and got his mum's permission of course!). This is his review:

The book tells us about twenty different birds from all around the world, including common birds such as the Robin and Mute Swan together with less well-known birds such as the Oilbird and Sungrebe. The introduction says, 'Let's discover what it's like to be a bird...' and the book describes birds' amazing skills like perching, preening, singing and nesting.

One of my favourite pages is called 'The fox and the bird' and it's about partridges. It explains how a mother partridge can outwit a fox trying to gobble up her chicks. It's really clever. Another page that taught me something new is called 'The hunter who listens'. It has a wonderful picture of a Great Grey Owl and explains how good these birds are at listening.

I would recommend this book to anyone who wants to learn more about the unique characteristics of different birds and their incredible features.

Rory Wouters & Rosie Filipiak (SOC Librarian)

The Glitter in the Green: In Search of Hummingbirds. Jon Dunn, 2021. Bloomsbury, London, ISBN 978-1-5266-1307-3, hardback, 339 pages, 16 plates with colour photos, £20.

As a hummingbird aficionado for whom over-seas travel has been all-but banned by recent events, this book was published at the perfect time for a vicarious trip in search of these special birds. Travelling the length of the Americas from Alaska to Tierra del Fuego seeking particular hummingbird species, the author skilfully weaves together the mythology, history and people

associated with this fabulous family of birds. Many of the people he meets are concerned with studying and conserving hummingbirds. We learn for instance of the myths attached to hummingbirds that must be considered a serious threat to their survival. Birding eco-tourists to central and South America likely remain blissfully unaware of the trade in *chuparosas* (dead hummingbirds wrapped in prayers as love charms) and Dunn does not spare us from this. You can feel his anguish on finding this illegal practice still thriving.

I found the book totally engrossing throughout; the descriptions of people, places and birding expeditions were expertly portrayed and I gained an immense amount of knowledge about hummingbirds. There are 26 very fine colour photos of these exquisite birds. But, for me, it is in the beautifully written narration of his sightings of the birds where Dunn really excels and his passion for them shines through. You are instantly transported by that 'searing bolt of turquoise' to a lodge in the Colombian rainforest.

Rosie Filipiak

New Books also received in the George Waterston Library

Goshawk Summer: A New Forest Season Unlike Any Other. James Aldred, 2021. Elliott & Thompson, London, ISBN: 978-1-78396-612-7, hardback, 234 pages, £14.99.

Seabirds: The new identification guide. Peter Harrison, Martin Perrow, Hans Larsson, 2021. Lynx Edicions, ISBN 978-84-16728-41-1, hardback, 600 pages, €75.00.

The George Waterston Library is open for browsing and borrowing during Waterston House opening hours (check SOC website). Books can either be borrowed directly or can be posted out (UK only, conditions and p&p charges apply) by emailing the Librarian (Library@the-soc.org.uk).

OBSERVATORIES' ROUNDUP

Observatories' Roundup is a regular bi-annual feature about our bird observatories in Scotland. The intention is to publicise the work of the observatories, visiting opportunities, as well as incidental snippets of news from the islands.

Fair Isle Bird Observatory

Plate 237. A provisional 3D visualisation of the new Observatory. © *Colin Armstrong Architects*

Rebuild update

We are extremely pleased to announce that following the securing of substantial funding from the Scottish Government and Highlands and Islands Enterprise together with the appointment of a builder we will now be rebuilding the Observatory starting in 2021.

IDMH were awarded the contract for the rebuild after a lengthy and rigorous tender process and we are delighted to welcome them on board. It is intended that the completion date for the rebuild will be October 2022, with us fully reopening to guests in spring 2023.

The importance of the Observatory both in conservation terms, and in relation to the Fair Isle community, was recognised by a large number of funders and also the wider public. Can we thank everyone who contributed to our Public Appeal which raised the magnificent sum of £650,000 without which we would have been unable to proceed with the rebuild at present.

Construction-wise, the new Observatory will again be modular and of a similar size to the previous one, being built on the same foundations with a number of enhancements and improvements throughout. We are already looking forward to welcoming everyone back to Fair Isle in 2023.

Bird news, April to September

The seasonal team arrived on the island in mid-March and again consisted of Dan Gornall and Alex Penn as Assistant Wardens with Georgia Platt as Ranger. Additionally, Max Hellicar joined as a long-term volunteer between April and August. After last year's late arrival due to COVID-19, everyone was keen to experience spring census for the first time. Having said this, spring took a little while to get going with some wild weather between 4 and 11 April involving gale force north-westerly winds and heavy snow fall, delaying the arrival of various spring migrants and breeding seabirds. This leant a rather wintery feel to the start of the season, although the first Wheatear of the year did make landfall on 5th in a snow-covered South Harbour! The 21st saw a full island twitch for Fair Isle's first White-billed Diver since 1979. It was found on the sea off South Light. Remarkably, just two days later, this was followed by a second individual (in full summer plumage). The end of the month saw some more favourable winds and migrants started to arrive, including a rather unseasonal Little Bunting and Hornemann's Arctic Repoll both found on 25th.

May was an exceptional month for migration with some falls of common migrants along with a rather nice list of rare and scarce birds. The 7th saw a White-tailed Eagle in off at South Light, one of three during the spring and continuing the welcome upturn in records of this species. Just half an hour into census the following day, a Calandra Lark was found at Utra Scrape, sounding the first mega alert of the season! This was followed by a Red-throated Pipit at Breks that afternoon. A south-easterly airflow continued and so did the birds with a Hoopoe, two Wrynecks, Hawfinch, Nightingale, Osprey, 141 Willow Warblers, 19 Pied Flycatchers, 12 Ring Ouzels and ten Redstarts all on 11th. The following day hosted the islands seventh Pallid Harrier along with a female Citrine Wagtail. An

Plate 238. Honey-buzzard, Utra, Fair Isle, 16 July 2021. *© Dan Gornall*

Olive-backed Pipit on 14th was another surprising spring record. Census continued in an exciting manner with Black Kite (16th), Little Ringed Plover (18th), Great Reed Warbler (20th), Golden Oriole (24th) and three Bluethroats (25th). Although things were not quite over, and the month went out with a bang. The 28th was a memorable day in the field, glorious sunny and flat calm weather accompanied a cracking end of day list; Eastern Subalpine Warbler, Tawny Pipit, Quail, Wryneck, three Rustic Buntings, Blue-headed Wagtail, Red-backed Shrike and two Icterine Warblers. One of the spring's stand out events occurred on 29th when the second Calandra Lark of the year was discovered at Meadow Burn. This became the longest staying individual for the UK, not departing until 11 June. It was also the ninth record for the island and 24th for Britain. Finally, the spring saw an amazing arrival of up to seven Rustic Buntings, including two smart males. The highest ever Fair Isle spring total.

Summer was jam-packed full of seabird work; a lot was crammed in this year including full-island counts due for several species. These didn't throw up too many surprises although the continued decline of Shags and Kittiwakes is unfortunately still very apparent. It was a mixed breeding season overall with a late start for many species due to the extended spring cold snap, although most species eventually managed reasonable breeding success. It was rather pleasing to see Arctic Skuas have their second consecutive year of good productivity despite the slightly lower number of nests (AONs). In contrast, Great Skuas had their highest ever total of 535 AONs, although this was followed by a significant outbreak of avian influenza with large numbers of dead adults being found around the isle. This had a significant effect on breeding success and resulted in a rather catastrophic total of just 42 fledged young from the huge number of nests. It will be interesting to see the knock-on effects of this over the next few years. In more positive news, 2021 saw the deployment of leg-mounted GLS tags to 20 of our breeding Puffins as part of the SeaTRACK project, mapping wintering distributions of seabirds across Europe.

Birding wise it didn't completely quieten down during the summer period, with good birds accompanying some long days of seabird fieldwork and making for a happy team. A Rose-coloured Starling influx that put last year's total to shame - finishing on 12 adults between 4 June and 20 August. On 23 June, Fair Isle's third Green Warbler was trapped in Vaadal. This follows birds in both 2017 and 2020, a remarkable proportion of the eight British records. A Stone-curlew on 11 July was a very welcome mid-summer visitor, as was the stunning female Honey-buzzard between 10–25 July making it the island's longest stayer by quite some way.

A good spell for cetaceans in August produced Minke While, White-beaked Dolphin, Risso's Dolphin and Harbour Porpoise. But was highlighted by an Orca visit (27s and 64s pods) on 23 August, as they circumnavigated the island on the hunt for seals, giving spectacular views to bystanders along the way.

Autumn census got underway at the beginning of August, and although the early autumn period has again lacked any big numbers of common migrants, it has still managed to produce some great highlights. Two Booted Warblers (10th and 28th) the first being the earliest-ever autumn record. Continuing with the 'unprecedented influx' theme of this season, no fewer than four Melodious Warblers have been found so far this autumn, an amazing total for this species so far north, and bizarrely in the absence of any Icterine Warblers. The start of September saw good numbers of both Barred Warbler and Common Rosefinch, Buff-breasted Sandpiper

(1st), Woodchat Shrike (9th), Collared Flycatcher (10th), Little Bunting (13th) and the first Yellow-browed Warbler of the year (16th). A great start to the autumn period with the peak still to come.

Douglas Barr, Chairman of the Fair Isle Bird Observatory Trust

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Isle of May Bird Observatory

As is usual in the island's calendar, NatureScot reserve staff returned from 22 March and daily bird recording commenced from that date. Early spring saw some of the wintering birds depart and the start of the northward push coinciding with the arrival of a few of the earlier summer migrants. The north of the island attracted an immature Iceland Gull on the evening of 26 March with an adult foraging in seaweed five days later. The late March period is a good time for migrating Whooper Swans on the east coast and a herd of 58 flew north on 31 March, whilst a Snow Bunting was noted the same day. Other highlights included a male Common Crossbill on 4 April and a single pale-bellied Brent Goose on 2 March with it, or another, on 7–8 April on Rona. The island attracts a few over-wintering Short-eared Owls which take advantage of the local House Mouse population - the last individual was seen on 31 March. However, more unusual was a resident Barn Owl which was noted on several dates between 24 February–30 April, only the 13th record in the last fifty years.

Following the arrival of the first early migrants such as Chiffchaff, Wheatear and Sand Martin, spring was then dominated by a cool northerly airflow which brought low temperatures. On occasions temperatures dropped to below zero overnight and snowfall was recorded on the nearby mainland in early May but didn't quite reach the island. As a result, migration was slow and this was best demonstrated in movements of hirundines as the entire spring period produced just two records of House Martin, a species usually well represented. Swallows and Sand Martins fared little better. The expected passage of north-bound Meadow Pipits can register daily counts into their thousands but this spring never got beyond three figures whilst the first Willow Warbler arrived on 20 April, twelve days after their mean arrival date. This slow start continued until eventually the floodgates opened in mid-May with a big pulse of northern-bound birds during 12–14 May.

Despite the slow start, the island still produced some noteworthy rare and scarce bird highlights, especially in late May during a spell of south-easterly winds. The best of the bunch involved a stunning male Rustic Bunting which was discovered near the main lighthouse and remained for two days on 21–22 May. This represented the 20th island record but the first since June 2016. The same spell of weather also produced a male Red-backed Shrike at the Top Trap garden. Other highlights included an elusive Greenish Warbler on 23–27 May, a showy Quail which was discovered on 12 May running down Puffin burrows whilst it, or another, was noted on 19 and 21 May. Island scarcities during the spring included a Little Grebe on the Loch on 1 March, single Stock Doves on 1 and 21 April, a partial summer plumage Black Guillemot on 9 April, and north bound Ospreys on 8 April and 11 May. However, there was still talk of winter weather as a herd of 29 Whooper Swans flew over on the very unseasonal date of 30 May.

The final major talking point of the spring occurred in early June when a Woodchat Shrike was discovered near Fluke street on the evening of 3 June. The bird was extremely elusive (very un-woodchat like!) during its fleeting stay, with only

Plate 239. Rustic Bunting, Isle of May, 22 May 2021. © *Bex Outram*

three residents catching up with it. This was the island's sixth record, with previous Woodchat Shrikes being recorded in 1921, 1922, 1976, 2003 and 2013. Despite these highlights, it was a notably quiet spring with a lack of other more regular drift migrants such as Bluethroat, Icterine Warbler or even Common Rosefinch, species which are often the mainstay of an Isle of May spring.

Breeding season

The summer months on the Isle of May are dominated by the breeding seabird assemblage and noteworthy highlights included:

- Cormorants continued to expand their colony with 14 pairs nesting, producing 27 fledged young.
- European Shag numbers stable at 491 AON.
- Kittiwake population increased for the third consecutive year - highest total since 1997, productivity was one of the best on record.
- Arctic and Common Tern numbers generally stable with good productivity.
- A pair of Roseate terns lingered for all of June–July but no breeding attempt was made.
- Auks had a good year with populations of Razorbill and Guillemot slightly up.
- Late start to the Puffin season but numbers remained strong.
- A pair of Manx Shearwater returned to the island for the summer.
- Record population of Greater Black-backed Gulls with 116 AON

The major talking point of the summer was the confirmation of nesting European Storm Petrels on the island. Work in the late summer established that birds were responding to play-back and endoscope surveys revealed at least three chicks in burrows. This is the first recorded breeding on the island. Further investigation work is planned for next season to establish the population size and extent.

Autumn begins...

The summer months were dominated by the breeding seabirds, with the occasional migrant drifting through, although interestingly a Redwing and a Chaffinch summered - the first time either species has remained on the island throughout June–August. Migration slowly started cranking into life from mid-July with the first Sooty Shearwater of the season, whilst a female Marsh Harrier went south on 25 July. Wader passage had commenced by then with the first returning Purple Sandpipers recorded from 3 July, Redshank from 7 July and Dunlin from 11 July. More noteworthy records included a Wood Sandpiper on Rona on 6 August, five Green Sandpipers together on 6 August, three Greenshanks on 22 August and 31 Black-tailed Godwits flying west the same day. Further records included a handful of Grey Plovers in early September, the second Sanderling of the season on Rona on 10 September, whilst a juvenile Little Stint lingered from 12–16 September which was the first since 2016.

The month of August brought the first flurry of common summer migrants through the island with the expected Willow, Sedge and Garden Warblers alongside Chiffchaffs and Whitethroats. The first scarce drift migrant of the autumn came in the form of a Common Rosefinch on 18–20 August with a Barred Warbler trapped and ringed on 23 August. Migration continued to be slow in September, although a dark juvenile Honey-buzzard drifted over on 18 September representing the tenth island record. Other island scarcities included a female Pintail west on 5th, Treecreeper on two dates, Black Redstarts on four dates and further Common Rosefinches on 5–6 September with two on 9th and one the following day.

The early autumn failed to produced any significant falls as there was a distinct lack of easterly winds and the wait for the autumn's first Yellow-browed Warbler went into October. Blocking winds had delayed the arrival of Pink-footed Geese but following a skein of 42 west on 19 September, an impressive movement on 22nd produced a new island day count of 10,715 heading west. Between 19–29 September a total of 15,493 Pink-footed Geese was logged. During this period, Little Gull passage peaked at 178 on 29th with 82 on 22nd and 80 on 21 September. The usual diver movement brought individual Great Northern's on 20th and 29th, two herds of Whooper Swans were recorded whilst five juvenile Mute Swans on the sea below the Bird Observatory were particular noteworthy for the island. The outstanding highlight was a juvenile Sabine's Gull north on 24 September, the seventh in the last seven years.

Plate 240. Observatory Committee looking at traps.
Plate 241. Rebuilt Arnott Trap. © *David Steel*

Committee visit on island

For the first time in recent memory, the Isle of May Bird Observatory Trust committee members attended an on-island meeting on 5 September. The meeting was well attended and allowed face-to-face discussions and decisions on a variety of issues ranging from trap replacements to vegetation management. All found the day very constructive, experiencing the island in fabulous weather and also enjoying a scattering of migrants including Common Rosefinch and Pomarine Skua.

Arnott Trap rebuild

The planned replacement programme of Heligoland traps continued as the third (of four traps) was replaced by the work party during the month of July. The distinctive Arnott Trap, originally constructed in 1975, was removed last winter and fully replaced during a four-week period this summer. The trap, with minimal vegetation, complements the three other traps and is known to catch a different array of species, particular thrushes, pipits and owls. The work involved up to fourteen volunteers including a collaboration with the SRUC college at Cupar, who provided two students to assist the rebuild. This is the third trap to be replaced following the Top Trap (spring 2017) and Bain Trap (spring 2019) with plans to replace the Low Trap in spring 2022.

Bird Observatory opens

The previous 18 months have been a difficult time for the bird observatory with COVID-19 preventing full normal operations. This year the bird observatory remained closed throughout the spring with only the work party staying during July to reconstruct the Arnott Trap. After what had seemed a considerable amount of time, the observatory welcomed guests back to the premises with the first groups returning from 31 July and plans to remain open until early November. It is envisaged some normality will return to opening next season with the visiting observer presence hopefully back to normal.

David Steel, NatureScot Reserve Manager, Isle of May.
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North Ronaldsay Bird Observsatory

May started slowly. The first Arctic Tern of the year was at Westness on 1st along with yet another Iceland Gull at Vincoin. The first Wood Sandpiper was on Ancum on 2nd and the first House Martin on 3rd, plus a very showy Little Gull was near Bewan. Our first Tree Pipit was at Holland on 6th, with the first Little Tern, Hawfinch, Common and Lesser Whitethroats following in the coming days, and the first of three Stock Doves was discovered around Kirbest. Easterlies and overnight rain on 9th brought a flurry of migrants including Pied and Spotted Flycatchers, Redstart, Willow Warbler and Green Sandpiper. Our second Wryneck of the year was found at Seaside (the first was at Neven in late April). The good numbers of migrants continued for a few days and included a Hobby, not something we see regularly up here. The 11th saw a very showy Grasshopper Warbler skulk around the bushes near T3, while another Wryneck was seen briefly at Breckan, and the first Swift screamed its way onto the year list.

Plate 242. Red-rumped Swallow, North Ronaldsay, Orkney, 31 May 2021. © *George Gay*

A pair of Snow Geese arrived mid-month. Both were ringed, but it wasn't until they moulted in July that we found out they'd fence jumped from a wildlife park in Germany! A Temminck's Stint was seen briefly on 14th then heard later in the afternoon over Ancum. Our first Cuckoo and an Osprey arrived on 16th while a more frustrating situation involved a small harrier sp. seen on two dates but very poorly. The consensus is that it was almost definitely a Pallid, but poor photos and bad views of the bird will leave it on the cutting room floor this time around! The 17th saw a Black Kite and female Marsh Harrier head south in what was proving to be a good month for raptors. A late Little Auk was seen from the sea-watch hide on 20th and a Corncrake at Peckhole. A Yellow Wagtail and Turtle Dove were present on 21st. The 24th saw more rain and more migrants with an Icterine Warbler in the walled garden near the Obs, a Wood Warbler at Trinley and the first Red-backed Shrike of the spring at Scottigar. The following day saw another Red-backed Shrike at Ancum but was followed by a Great Grey Shrike in the same place - our latest spring record by 13 days. As the month drew into its last week a Nightjar was present around the Obs, and our second Goosander of the year was in Nouster. Not to be outdone a Blyth's Reed Warbler was then found on a dyke near the lighthouse and a Golden Oriole flushed from Holland House gardens. The last day of May ended with a bang, thick fog enveloped the island in the morning, and it had brought goodies with it! First a pair of Spoonbills on Bewan in the morning quickly followed by a Red-rumped Swallow that spent the day around the Obs with about 15 House Martins.

June started bizarrely, with the Red-rumped Swallow still present the last thing we expected was to find a White-fronted Goose with Greylags on Ancum, but that's the joy of Northern Isles birding, I guess! More Acro action on 2nd saw a Marsh Warbler discovered at Ancum Willows in the morning followed by another Blyth's Reed Warbler at Antabreck in the afternoon. A pair of Grey-headed Wagtails appeared at Westness and the second Hobby of the year passed high over Ancum on 7th and the second Turtle Dove of the year appeared on the 11th along with two Crossbills at the School. A quieter period followed until an adult Rosy Starling joined the feeding Starling flock on the Links on 17th. The 19th brought a surprise fly-over Grey Phalarope on the Links and a White-tailed Eagle was seen on the 20th.

July brought our second Rosy Starling on 8th at Lenswick. But is usually a slower month, and this proved to be the case with odds and ends in between. The next avian highlight was a very long staying Quail that spent the best part of two weeks showing infrequently around the Obs croft. A third Rosy Starling was seen on 20 July and the first juvenile Willow Warbler appeared on 29th.

August was slow to get going, with a Cuckoo at Rue the pick of the bunch from the first week followed by a Reed Warbler on 7th. The first Barred Warblers appeared on 10th and a very tricky Acro on the Links on 12th proved to be yet another Blyth's Reed Warbler. The 14th saw an American Golden Plover near Holland, another long-stayer that showed well at times deep into August. Sea-watching began to kick up a gear too with 19th seeing a rather smart fully spooned dark-phase Pomarine Skua and a Sabine's Gull pass the hide. Things began to slow up as the month reached its latter stages but a Pied Flycatcher near Torness on 23rd gave a glimmer of hope that we might get some migrants in what had been a slightly disappointing August. A Little Stint on 26th, Common Rosefinches on 27th and 28th and a

Barred Warbler on 30th were about the last August had to offer on the land in what had been a disappointing end to the month. At this point we turned away from the land and the sea-watching really kicked off. The first notable bird was a Balearic Shearwater off the Beacon on 30th followed by a non-avian highlight in the shape of some Tuna!

Sea-watching totals were good into September, with regular sightings of Pomarine and Long-tailed Skuas, Leach's Petrel and remarkably Fea's-type Petrels! A spate of sightings over the best part of a week put the total at six Fea's-type Petrels but we assume this refers to one or two birds and not six separate individuals. A Cory's Shearwater on 4th left the sea-watch haul looking pretty strong. A sighting of Orcas diverted us from the land birds on 5th as the 27s pod toured the island throughout the day. We also had a Mediterranean Gull past the Beacon, not to be scoffed at this far north. A group of three Common Rosefinches were at Holland for nearly ten days but avoided the mist nets, much to the annoyance of the ringers amongst us! Two Pectoral Sandpipers were at Brides on 7th but were eclipsed by the island's second Lesser Yellowlegs, briefly on Bewan, then at Brides where it showed ridiculously well. More Wood Warblers arrived on 9th, followed by a dove ID conundrum we perhaps won't ever solve. A species of Turtle Dove was photographed on 9th before being re-discovered the next day; initial impressions were that the bird was a Rufous Turtle Dove and what we knew of them at the time pointed in that direction. Further reading, and the discovery of presumably the same bird on Fair Isle, where it was seen well and not considered a RTD, raised doubt in our minds. Our next ID conundrum appeared some two days later, a *Ficedula* flycatcher at Westness displaying a thick, club-shaped white base to the primaries, obvious collar and paler rump evaded capture in pouring rain, but the bird displayed enough characteristics for us to submit it as a Collared Flycatcher. Another Reed Warbler, this time at the Beacon and a Barred Warbler around the sea-watching hide were the highlights on 12th, or so we thought, until a Dotterel was found late in the day on Torness. The following day saw the Dotterel joined by our first Buff-breasted Sandpiper of the year. Highlights were pretty few and far between for the next couple of days until a second Buff-breasted Sandpiper was found at Sjavier only to be upstaged by the islands first record of Lesser Scaup, found on Bewan, and present for just over a week. A late Swift was seen by the Pier on 20th and a Dark-bellied Brent Goose was on Bewan on the same date. The 20th saw three Pectoral Sandpipers found at Brides and a Red-breasted Flycatcher at Antabreck. Another Pectoral Sandpiper was on Bewan on 24th. The 25th produced three Long-tailed Skuas and two Pomarine Skuas, while the third Buff-breasted Sandpiper of the year arrived in a Golden Plover flock at the Standing Stone field. A Yellow Wagtail was around Dennishead on 26th with the first Yellow-browed Warbler of the year finally found in the afternoon. A wet and windy day on 27th provided a surprise Marsh Warbler at Trolla and the first Slavonian Grebe of the year was at Westness, and a second Red-breasted Flycatcher of the year was trapped at Holland on 29th. However, bird of the day on 29th was a very obliging Arctic Warbler near Sangar, a long-awaited rarity for quite a few guests and staff who had been slogging away with little reward. The month ended quietly, but with October on the horizon you never know what's coming next!

George Gay, North Ronalsday.
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Plate 243. Lesser Yellowlegs, North Ronaldsay, Orkney, 7 September 2021. © *George Gay*

Plate 244. First-calendar-year Citrine Wagtail, Fair Isle, Shetland, October 2020. © *Daniel Gornall*

An exemplary SBRC submission – Citrine Wagtail on Fair Isle

D. GORNALL (with comments from M. Wilkinson & C.J. McInerny on behalf of SBRC)

As a brief introduction, the Scottish Birds Records Committee (SBRC) was set up in 1984 as a subcommittee of the Scottish Ornithologists' Club (SOC) Council. Its role is to assess records of species that are rare in Scotland, but not rare enough in Britain to be assessed by the British Birds Rarities Committee (BBRC), for inclusion in SOC published bird reports. For more information about SBRC, see www.the-soc.org.uk/bird-recording/about-sbrc.

In a typical year, SBRC assesses approximately 90–100 records, with a recent overall acceptance rate of around 85%. Here, we present an exemplary submission of a record of a Citrine Wagtail, present on Fair Isle from 29 September to 8 October 2020, and discuss the reasons for highlighting this particular record.

The future aim of SBRC is to publish one such submission per year in *Scottish Birds*, to illustrate and emphasise new or poorly known identification features, or show a submission that uses a novel approach, or simply a particularly interesting record in a Scottish context. We hope that publishing such submissions will encourage observers to follow this example when they create and submit their future records to SBRC.

The record was submitted using the standard SBRC form (see https://www.the-soc.org.uk/bird-recording/rare-bird-record-form) which is strongly recommended by SBRC. It has sections for information which aid the judgment of records such as first and last dates, the optics used to view the bird, weather conditions, distance and duration of viewing, and the observers previous experience of the species. It also encourages the inclusion of a detailed description of the bird's plumage and bare parts, and photos and sound recording of calls and songs where available.

Below is the description received from Daniel Gornall of the Citrine Wagtail on Fair Isle, with minimal editing. Submitted with the description were a series of photographs (a selection of which are reproduced here), two sonograms, and an audio recording of the birds call.

Description

A 'grey and white' wagtail feeding on the seaweed on the beach at the bottom of Furse caught my attention whilst out on north census. It fed there for most of the day and I spent a good hour with this bird upon finding it. It stayed on the isle just over a week and was seen at various other places in the south.

Not the most typical looking Citrine, it has a very weak facial pattern (although this is by no means unheard of for this species and similar looking birds have turned up on Fair Isle in the past), some of which can be difficult to see in the field if views are distant, and it was only after getting closer and taking better photographs that I was able to be confident on the ID of this individual, ruling out Eastern Yellow Wagtail that can also turn up at this time of year.

The following features point to Citrine rather than Eastern Yellow Wagtail, with a sound recording/sonogram clinching the identification:

Overall appearance

- upperparts - pale brownish-grey mantle and head, slightly paler towards the forehead, dark centred coverts and tertials fringed white (with a thick white base to the median and greater coverts producing the two bold wing-bars), underparts a pale buffish-white and tail black with white outer tail feathers. Legs and feet dark.

Age

- 1cy - on the complete grey/white/black plumage with no yellow tones visible in the underparts or on the face.
- A complete pale ear-covert surround is visible at close range and in some of the attached photographs, Eastern Yellow wagtail should just have a pale supercilium, lacking any ear-covert surround.
- Two bold and thick white wing-bars on dark wings look like typical Citrine rather than the narrower wing-bars normally present in Eastern Yellow Wagtail.
- The lores appeared pale and not solidly dark as they should be in Eastern Yellow Wagtail.
- The hind claw is longish but difficult to assess the actual length and looks fine for Citrine.

Plates 245–246. First-calendar-year Citrine Wagtail, Fair Isle, Shetland, October 2020. © *Daniel Gornall*

Call

- a drawn out buzzy wagtail call that did sound like typical Citrine - although they can be hard to do in the field just by ear.
- Finally, this bird was sound recorded to be 100% sure on the identification and shows a typical Citrine Wagtail sonogram, repeated below along with an explanation.

Although this bird does show a slight pale base to the bill in some pictures, which is not a typical feature of Citrine - this wasn't particularly obvious in the field, and overall, with all other features pointing towards Citrine, along with the diagnostic call/sonogram, this slightly 'odd' feature is far outweighed.

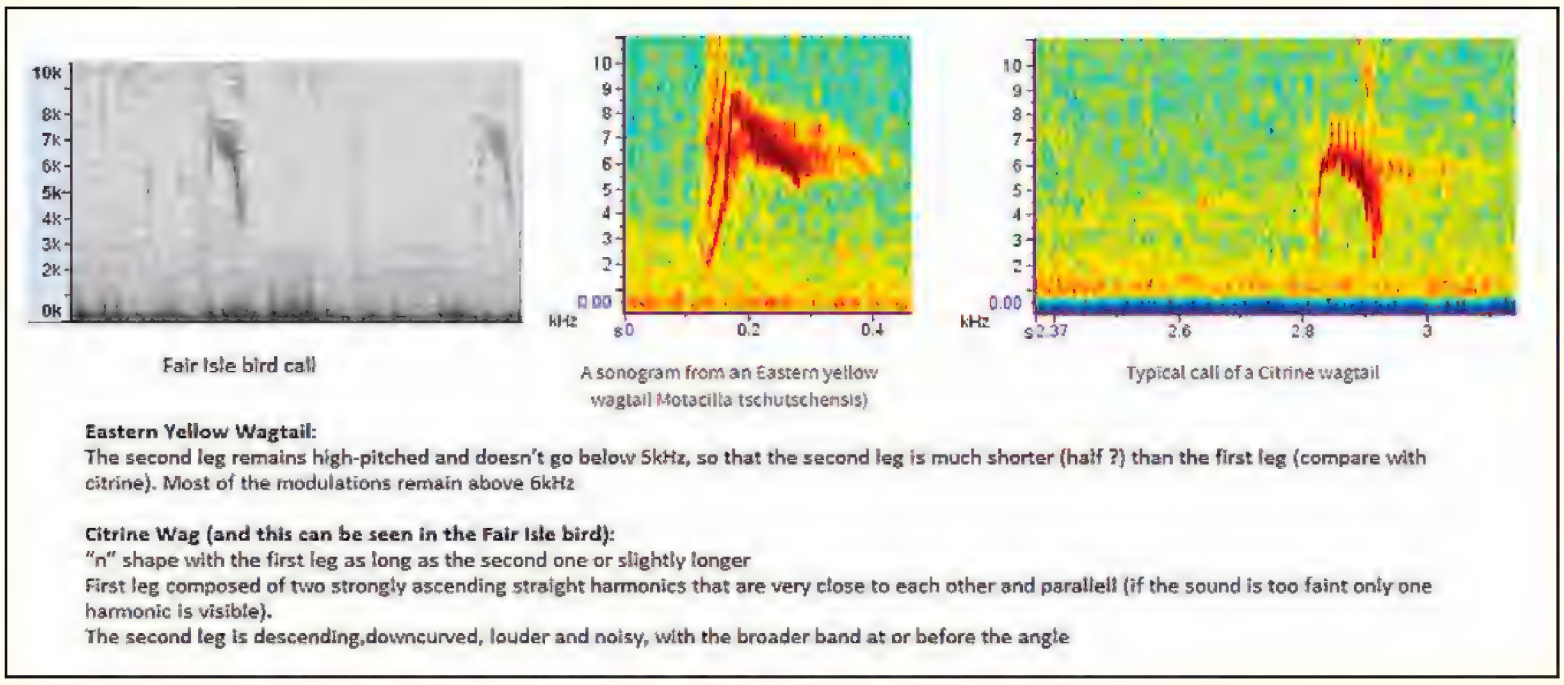
10k
8k
7k
6k
5k
4k
3k
2k
0k
Fair Isle bird call
kHz
s0
0.2
0.4
A sonogram from an Eastern yellow wagtail Motacilla tschutschensis)
kHz
s2.37
2.6
2.8
3
Typical call of a Citrine wagtail
Eastern Yellow Wagtail:
The second leg remains high-pitched and doesn't go below 5kHz, so that the second leg is much shorter (half ?) than the first leg (compare with citrine). Most of the modulations remain above 6kHz
Citrine Wag (and this can be seen in the Fair Isle bird):
"n" shape with the first leg as long as the second one or slightly longer
First leg composed of two strongly ascending straight harmonics that are very close to each other and parallell (if the sound is too faint only one harmonic is visible).
The second leg is descending,downcurved, louder and noisy, with the broader band at or before the angle

Figure 1. Comparison of sonograms of the Fair Isle Citrine Wagtail and Eastern Yellow Wagtail.

SBRC comments

What made this record interesting and noteworthy was that it described a 'non-classic' Citrine Wagtail. This was because it had a rather subdued head pattern lacking the usually obvious pale ear-covert surround shown by the species (Plates 244–246). Furthermore, it had a slightly paler base to the lower mandible, unusual for Citrine Wagtail which typically shows an all-dark bill. Both of these features might have been explained by the bird being instead another closely related species, such as Eastern Yellow Wagtail *M. tschutschensis*, or even a grey and white example of an eastern form of Western Yellow Wagtail *M. flava*.

However, such was the quality of the submission that SBRC could accept the record as a Citrine Wagtail on a single circulation. The description made excellent use of sonograms and sound recordings, which are particularly helpful when separating Citrine Wagtail from Eastern Yellow Wagtail (Figure 1). Had the description been superficial, or the bird not sound recorded, this record may have proved more problematic for SBRC to accept as a Citrine Wagtail. The description itself is concise and to the point, focussing on the main identification features. Where apparent anomalies exist, they are mentioned and explained by the observer.

A selection of the SBRC comments during the adjudication include:

'This is really good! It even includes sonograms which helps point the way to the right ID. Excellent use of description, photos and sonogram to rule out Eastern Yellow Wagtail.'

'Extremely detailed description, credit to the observer for effort. Details provided confirm identification and rule out Eastern Yellow Wagtail.'

'In spite of the potentially problematic 'non-classic' face pattern, there is no doubt about the ID. This is the best documentation of a rarity I have seen since joining SBRC.'

'Agree that this is a really good submission. The 'non-classic' head pattern isn't a problem in this case, although it potentially could be if there were lots of other anomalies. Birds with indistinct pale ear-covert surrounds, for instance, have turned up in Shetland recently too (one at Hillswick in September 2019 was one such example).'

'Yes, a nice description, and good to learn something new. A far from classic individual in terms of head pattern, but topical in light of the recent increase of Eastern Yellow Wagtail (or were we just missing them before?).'

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Christopher J. McInerny (Secretary, SBRC), 10 Athole Gardens, Glasgow G12 9AZ.
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Plate 247. Eastern Yellow Wagtail Kildonan, Isle of Eigg, Highland, 29 October 2020. © *Bob McMillan*

Eastern Yellow Wagtail *Motacilla tschutchensis*, Kildonan, Isle of Eigg, 27–30 October 2020 – seventh Scottish record

J. CHESTER & R. McMILLAN

Autumn on Eigg in 2020 had been anything but memorable for birds for long-term resident John Chester, in fact it was probably the quietest autumn he had seen. However, despite this and the seemingly endless strong westerly winds and torrential rain showers, John decided on the afternoon of 27 October to venture up to the nearby hayfield at Kildonan. The main objective was to check if any Snipe or Jack Snipe had dropped in to the rush-choked marshes at the top of the field. However, on approaching the marshy area a small bird was flushed that flew a short distance before diving into the cover of the rushes. In flight the bird gave a distinctly 'lispy' sounding 'pseet' call and JC's first thought was that it might be a pipit. However, on flushing the bird again it was clearly a grey and white, rather short-tailed wagtail. A wagtail it might have been but it had surely been taking lessons from the *Locustella* warbler handbook! Despite large areas of sheep grazed grassland adjacent to the marshes it constantly flew a short distance over the rushes before diving back into their cover. The bird continued to behave in this way throughout its stay.

It was suspected that the bird was either a Yellow Wagtail sp. or a Citrine Wagtail. Several brief ground views established the fact that the clearly defined white supercillium was straight, extended well behind the eye and did not curve round the rear of the ear-coverts. This feature appeared to remove Citrine Wagtail from the equation and in discussions with Bob McMillan, given the late date, Eastern Yellow Wagtail seemed to be a distinct possibility. BBRC has adopted a cautious approach regarding this group, accepting only those which can be identified by a combination of plumage (ideally photographs), vocalisations and/or genetics (Rowlands 2016). Weather conditions had been unrelenting, causing challenges for the ferry service complicated by COVID-19 restrictions, so it was unlikely there would be any visiting birders!

Thankfully 30 October saw the wind drop off considerably and RMcM managed to hitch a lift on a fast boat taking divers from Skye to Muck, but which had agreed to drop him off at Eigg Pier and pick him up a few hours later. There was still a considerable ocean swell but after an uncomfortable journey, he duly arrived with camera and recorder and finally managed to set foot on Eigg. An island taxi to Kildonan, and a short walk to the hayfield followed. In typical island fashion, JC had recruited SWT Ranger Norah Barnes and taxi driver Angie Softley, for the search. We soon relocated the bird although its behaviour remained extremely skulking as John has earlier described, but it did show sufficiently for a few distant images to be taken. Although we had to flush the bird, fortunately we also managed to obtain some recordings of its flight call.

It was an opportune visit as the next two days saw storm force winds with gusts up to 80 mph lashing the island and there were no further sightings of the bird thereafter.

Field notes

In flight, clearly a pale grey & white looking wagtail though appearing rather short tailed for that family. Very little real detail could be obtained due mostly to the awful weather conditions and only the very obvious white outer tail feathers, rather indistinct double white wing-bars and overall greyish colouration could be established. The most obvious characteristic was the distinctive repeated call - a slightly 'lispy' sounding 'pseet'. On 28 October JC and Norah Barnes listened separately to recordings of the flight calls of Citrine and Eastern Yellow Wagtails, and agreed that the calls were much more similar to the latter.

On three separate occasions brief ground views of the bird were obtained before it retreated once more into cover. The clearly defined white supercillium was straight and extended well behind the eye but did not turn downwards at the rear of the ear-coverts. This feature in itself appeared to eliminate Citrine Wagtail from the equation. The crown, lores and ear-coverts were grey. In general, the overall impression was of a distinctly 'clean' plumaged wagtail basically grey above and whitish below. The upperparts were generally rather uniform grey with the white wing-bars not particularly prominent. The uppertail coverts and tail appeared blackish with obvious white outer tail feathers. The underparts appeared uniform whitish overall and the bill and legs appeared blackish.

Plate 248. Eastern Yellow Wagtail Kildonan, Isle of Eigg, Highland, 29 October 2020. © *Bob McMillan*

Incredibly skulking on the ground, the bird was constantly diving into the cover of the rushes and only occasionally emerging briefly into the open. It was effectively behaving more like a *Locustella* warbler than a wagtail! When flushed it flew short distances, calling repeatedly, before once more diving into cover. This behaviour was surprising when there was open grazing nearby occupied by sheep.

Images

The following features that had not been obvious in our brief field views were noted from the images taken by RMcM on October 30:

- Thin white partial eye-ring below eye
- White chin & throat
- White edgings to tertials & primaries - this indicated the bird was a juvenile
- Suggestion of brownish tinge on scapulars
- Seemingly two-toned bill
- Hint of long hind claw

Sound recordings

RMcM used an Olympus LS-12 recorder with a Rode Microphone to record the call on 30 October 2020 In the first recording 130926_0050.WAV there was just a single call. When the bird was flushed a second time it made a series of calls as it flew away and these were successfully recorded 130926_0053.WAV. Photographs and sound files of the call were shared with Dave Pullan who provided sonagrams and agreed it was a strong candidate for Eastern Yellow Wagtail. The sonogram images are shown below:

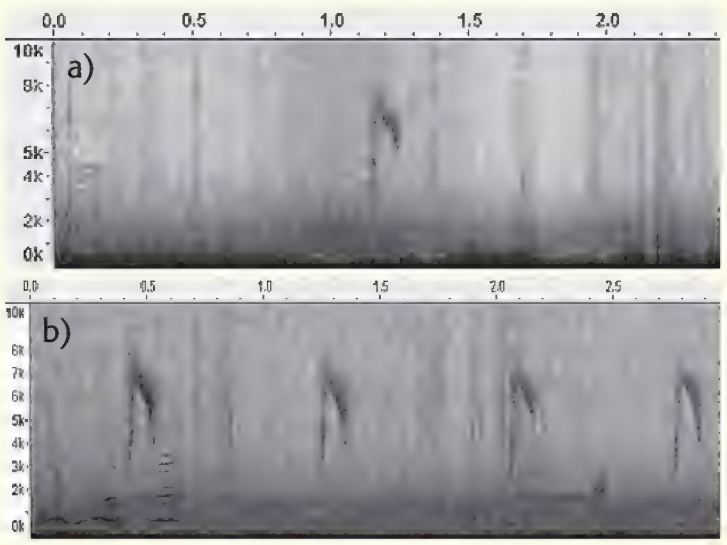

Figure 1. a) single call. **b)** multiple calls.

Dave Pullan then produced an improved sonogram of 2 above, for comparison purposes, using the same settings as in the *Dutch Birding* paper by Bot, Groenendijk & van Oosten (2014).

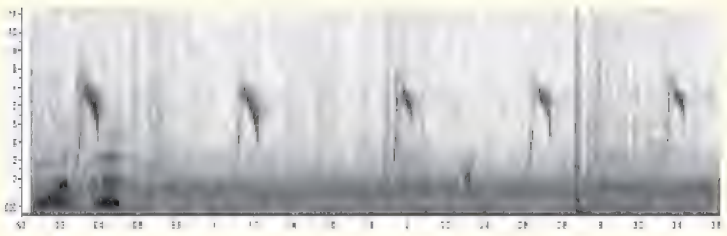

Figure 2. (improved) multiple calls.

In our view the calls recorded compare well with those in Figure 7 & 8 in the *Dutch Birding* article. There are two rising lines very close together which appear to join at the lowest pitch - this helps to separate from Blue-headed, British and Grey-headed Wagtails. On the 2nd (stronger) line there is no prominent hook which helps to separate from Ashy-headed, Spanish and Black-headed Wagtails. These supported our view that the Eigg bird was an Eastern Yellow Wagtail and the record was accepted by BBRC in August 2021.

Acknowledgements

Many thanks to Arisaig Marina Ltd for assisting Bob's passage to Eigg, and to Norah and Angie for their help on the day. Dave Pullan kindly provided advice and sonagrams of the diagnostic call essential to BBRC acceptance of the species, and which is shown above.

References

Rowlands, A. 2016. BBRC and Yellow Wagtails *British Birds* 109, pp389–411.

Bot, S., Groenendijk, D. & van Oosten, H. 2014. Eastern yellow wagtails in Europe: identification and vocalisations. *Dutch Birding* 36: pp 295–311.

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Eastern Yellow Wagtail status in Scotland

The yellow wagtail Motacilla *complex is extremely challenging with 13–16 taxa recognised mainly based on the head patterns of males in summer plumage (Groenendijk & van Oosten 2014). Following DNA analysis, Eastern Yellow Wagtail was accepted on to the British list by the BOU in 2013, and subsequently a number of records were accepted retrospectively including three from Scotland.*

The first record for Scotland was from Fair Isle on 9 October 1909 and it was 100 years before there was another record, again from Shetland on 4 October 2009. There was a further record from Shetland in 2011, and two in 2018. A record from Balivanich, Western Isles, in 2016 has now been accepted retrospectively by BBRC. The Eigg record is the first accepted record for Highland and illustrates that the species could be recorded anywhere in Scotland. All the records are of 1cy birds. Whilst a number of trans-Atlantic vagrants have been recorded in the Small Isles in recent years, including Veery, Mourning Dove and Franklin's Gull, this is the first time a species of Asiatic origin has been recorded.

Plate 249. Adult 'Black Brant' (left), with extensive necklace and much darker upperparts, Broadford Bay, Skye, Highland, 27 April 2021. © *Neil Bennett*

'Black Brant', Broadford Bay, Skye, 27 April 2021 – first Highland record

N. BENNETT & R. McMILLAN

There are three recognised sub-species of Brent Goose (*Branta bernicla*): Pale-bellied Brent Goose (*B.b. hrota*), Dark-bellied Brent Goose (*B.b. bernicla*) and 'Black Brant' (*B.b. nigricans)*. Only Pale-bellied Brent is a regular passage migrant in late summer and autumn on Skye, from a population which breeds in Arctic Canada and winters predominantly in Ireland. Though there are a few reports of *hrota* on return migration in spring each year, they are much scarcer at this time of year. Whilst Pale-bellied Brent flocks can occur throughout Skye, Broadford Bay is a favoured resting and feeding area. Dark-bellied Brent Goose, a rarity in Highland, has only been recorded twice previously on Skye, the last at Broadford Bay on 9 October 2019, whilst there are no previous records of 'Black Brant'.

A single Pale-bellied Brent was observed in Broadford Bay on 18 and 21 April 2021. In the late afternoon of the 27th, Neil Bennett (NB) found two Brent Geese at the mouth of the Broadford River which he assumed to be Pale-bellied Brents. He did notice that one of the birds was noticeably more 'black and white' in appearance, and managed to obtain distant images of the birds. Details of the sighting were posted on the local WhatsApp group as two Pale-bellied Brents. NB reviewed the images later that evening and although the images were distant and the birds sitting down, whilst one was obviously a *hrota,* the other bird which had appeared 'black and white' showed a number of features of 'Black Brant', including an extremely prominent 'wrap-around' neck collar (Plate 249). The images and suggestion of 'Black Brant' were sent by WhatsApp to Bob McMillan (RMcM). Unfortunately, RMcM did not see the images until the afternoon of the following day. However, RMcM agreed that one of the birds showed features of 'Black Brant' and, aware that Peter Stronach had seen a bird on the Western Isles, shared the images which Peter quickly confirmed looked a good candidate for *nigricans*.

Although a local observer reported two Pale-bellied Brents on the morning of the 28th, attempts to relocate them by NB had been unsuccessful. However, as the tide was rising in the late afternoon the birds were again located in Broadford Bay on Glas Eilean. The birds were showing well, though distantly, and were seen by NB, RMcM and several other observers including George Dunbar and Neil Hinchliff. Though the light was poor, a number of images and some video was obtained (Plates 250–251). The two geese remained in the vicinity of Glas Eilean until around 21:00 hrs.

At first light on the morning of the 29 April, a single Pale-bellied Brent was located at Glas Eilean, but despite an extensive search there was no sign of the 'Black Brant'. Whilst the birds had been together on the previous day, this suggested that perhaps the Pale-bellied Brent had been the bird first noted on 18 April and that the 'Black Brant' had been migrating north alone. Contact was made with the Irish Brent Goose Study Group - a well-photographed *nigricans* had been present during the winter in Dublin Bay, but it was apparent from image comparisons that this was not the Broadford Bay bird. However, it was suggested (G. McElwaine *pers. comm.*) that several Black Brants may have wintered in Ireland with Pale-bellied Brents.

Description

Alongside the Pale-bellied Brent (*hrota*) as seen in the images, the *nigricans* was noticeably black and white in appearance, though similar in size and structure. The white neck collar was broad and deep, almost a complete necklace, but not meeting at the back of the neck. The flank patch was pale white and streaked and quite extensive on this bird, but it is apparent from images online that this feature is variable. The belly looked darker brown in the poor light with limited contrast with the black breast and upperparts. Like Dark-bellied Brent the area between the legs was dark. The upperparts looked dark brown/black and darker than the *hrota*. The undertail coverts showed bright snow white. The head on this *nigricans* appeared angular with a thick neck giving the bird a much stockier appearance than the *hrota*. The bird appeared to be an adult.

This record has now been accepted by SBRC.

References

Forrester, R.W., Andrews, I.J., McInerny, C.J., Murray, R.D., McGowan, R.Y., Zonfrillo, B., Betts, M.W., Jardine, D.C. & Grundy, D.S. (eds) 2007. *The Birds of Scotland.* The Scottish Ornithologists' Club, Aberlady.

Plate 250. Adult 'Black Brant', Broadford Bay, Skye, Highland, 28 April 2021. © *Bob McMillan*

Plate 251. Adult 'Black Brant' in foreground, Pale-bellied Brent Goose behind, Broadford Bay, Skye, Highland, 28 April 2021. © *Bob McMillan*

'Black Brant' status in Scotland

'Black Brant' (B.b. nigricans) *breeds from west North America low Arctic to east Russian Arctic, and winters mainly from Japan to Korea and north-eastern China, and from Alaska to north-western Mexico. According to Mitchell and Ogilvie in* Birds of Scotland *(2007) it was a rare vagrant to Europe before the 1980s but is now a scarce and regular winter visitor. In Siberia its breeding range now overlaps that of Dark-bellied Brent Goose* (B.b. bernicla), *which probably accounts for an increased number of records of Siberian birds in the south of England, typically associating with flocks of* bernicla, *resulting in the species being removed from the BBRC list in 2005. Black Brants have also appeared with increasing frequency in the flocks of wintering Pale-bellied Brents* (B.b. hrota) *in Ireland and although annual numbers are small, it is suspected their origins are in Arctic Canada.*

The first record for Scotland was a single bird at Loch Gruinard, Islay, between 20 October 1989 and 17 May 1990. The next two records were on the Outer Hebrides with singles at Aird an Runair, North Uist on 24 April 2012 and at Poll na Crann (Stinky Bay), Benbecula, on 11 May 2012 (Duffield, S., Stronach, P. & Insley, H. 2012).

However, McGowan, R.Y., McInerny, C.J. & Scott, M.S. (2014) suggested that the two records in 2012 possibly related to the same bird loitering in west coast areas of the Uists and remaining undetected for almost three weeks, but this could not be proven beyond doubt from the details provided. Therefore, the Highland bird is just the fourth record for Scotland. They also commented that with up to ten birds wintering in England and Ireland around that time, it was surprising it had taken so long for another to be located in Scotland. Perhaps even more surprising, is the fact that it would be another nine years before the next record in Scotland. It is worth noting that there were 29 records of 'Black Brant' in England during 2019, all but two were in eastern and southern England (White & Kehoe, 2021).

Reference

Duffield, S., Stronach, P. & Insley, H. 2012. Black Brants on the Outer Hebrides - 2nd & 3rd Scottish records. *Scottish Birds* 32(3): 282–284.

McGowan, R.Y., McInerny, C.J. & Scott, M.S. 2014. Scottish Birds Records Committee report on rare birds, 2012. *Scottish Birds* 34(2): 99–116.

Lewis, T.L., Ward, D.H., Sedinger, J.S., Reed, A., Derksen, D.V., Carboneras, C., Christie, D.A. & Kirwan, G.M. 2020. Brant (*Branta bernicla*), version 1.0. In Birds of the World (S. M. Billerman, Editor). Cornell Lab of Ornithology, Ithaca, NY, USA. https://doi.org/10.2173/bow.brant.01

White, S. & Kehoe, C. 2021. Report on scarce migrant birds in Britain in 2019. *British Birds* 114: 374–396.

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Plate 252. Male Serin, Talmine, Sutherland 17 May 2021. © *Tim Drew*

Serin at Talmine, Sutherland – first Highland record

T.P. DREW

On 17 May 2021, after finishing a Breeding Bird Survey (BBS) up in the hills behind Tongue, I decided to drive to Talmine *en-route* back to my accommodation. The Talmine road has long been a favourite of mine in the area and I have had a few holidays in the past along this route. I was slowly driving past the cottage where I had stayed the previous summer in Midtown, when a small yellow finch flew up from the very driveway of the cottage. At first I took little notice, expecting it to be a Siskin, but as I drove on it followed the car and I noticed its bright yellow rump, with only faint wing-bars and I immediately thought "*wouldn't that be great it that would be a Serin*".

It landed on the grass verge, feeding on some Daisies 30 metres up the road. I stopped the car and managed with a struggle to reach for my binoculars, which were under the seatbelt, and peer at the bird through the front window. 'Serin!' Panic ensued and I found my binoculars twisted round my camera, which were both around my neck but unfortunately trapped underneath my seatbelt. It was a real struggle to free myself, so I was unable to get any decent picture, only managing a shot of a blurred background of grasses through the windscreen.

I eventually managed to park the car in a safer spot, untangle myself, breathe a little, and get out of the car for a photo. Unfortunately, the bird was hidden in grasses and I could barely see its head. I managed a random shot before it flew further up the road and was lost to view. I ran in the direction it flew but could not re-locate it, and the next hour or so become a bit of a stressful one. I knew what I had was a smart male Serin, and of the enormous rarity value within the region, but without a clear photo I couldn't prove it. I thought that this was going to be an all too familiar 'one that got away'.

After a fruitless search I was heading back up the road towards the original spot (by last year's holiday cottage) and looked into the next door's garden, where several House Sparrows were sat in the hedgerow. To my amazement it was there looking at me! Sitting next to a House Sparrow and perched almost in the open. Like Clint - but far more shaky - I was quick on the draw with my camera and managed a few crucial photo shots, with a huge sigh of relief (Plate 252). It soon flew off, never to be seen again, despite me returning and searching the area each day for the rest of the week.

Description

Size & Structure: Similar to that of Siskin. **Bill:** Short, grey with a 'pushed-in' appearance. **Head:** Fine dark streaking on crown and cheeks on an otherwise yellow head, forming a bright yellow circle on forehead extending all around the back of the ear-coverts to the throat and breast. **Underparts:** Bright yellow breast with bold streaking on sides. Off-white lower breast and clean white undertail coverts. **Upperparts:** Boldly dark streaked on yellow-green, two pale yellow wing-bars, though not as distinctive as Siskin. **Rump:** Bright yellow, unmarked. **Tail:** Dark and forked. **Call:** A distinctive trill.

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Serin status in Scotland

Serin is an extremely rare migrant to Scotland, with only 14 previous records to 2020, although half of these have occurred since 2014. Shetland and Fair Isle share eight records between them equally, with a further two on the Outer Hebrides, and a single from the Isle of May. From the Scottish mainland, there are just three records (Edinburgh, Lothian November 1911, St Abb's Head, Borders May 1998 and Collieston, North-East Scotland June 2020).

The overwhelming majority of records are from the spring, with 12 of the 14 records occurring between 10 April and 17 June, with an obvious peak at the end of May (Figure 1). The only records outside of this period are a male at Tresta, Fetlar on 31 August 2001, and the previously mentioned Lothian bird, which was of a male caught by bird-catchers in the southern suburbs of Edinburgh on 9 November 1911 (specimen at NMS). There is a possibility that this latter record concerns a bird that could have escaped from captivity (Andrews 1986).

With the recent upsurge in records, perhaps we will see more in future years, although it is likely that either April or May in the Northern Isles will continue to offer the most realistic chance of seeing this species in Scotland.

References

Andrews, I.J. 1986. *The Birds of the Lothians.* Scottish Ornithologists' Club (Edinburgh Branch).

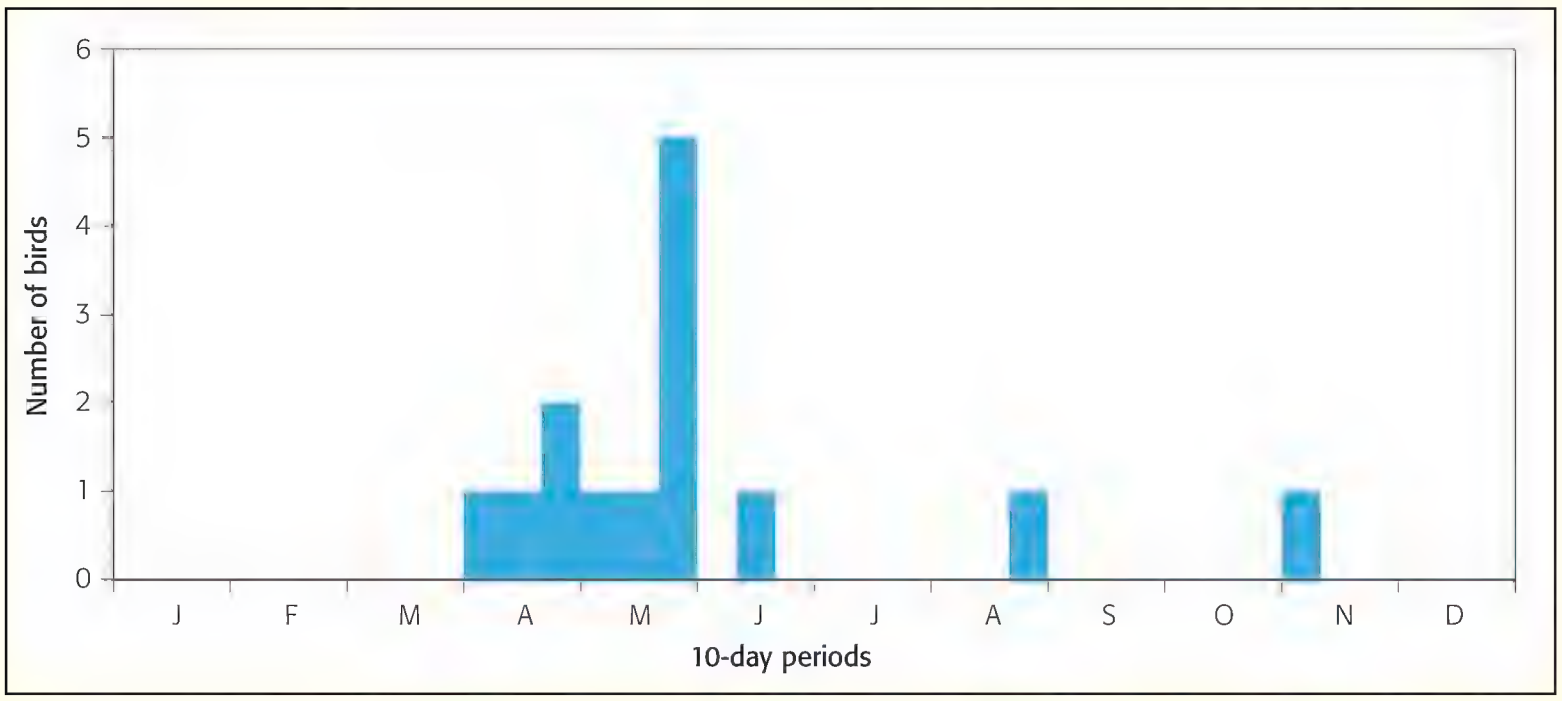

Figure 1. Occurrence pattern of Serin in Scotland, from 1911 to 2020 (SBRC data).

Plate 253. Black-winged Pratincole, Fetlar, Shetland, 17 August 2021. © *Robbie Brookes*

Black-winged Pratincole, Fetlar, Shetland, 10–30 August 2021 – second Shetland record

R. RIDDINGTON

Shetland has never been fertile hunting ground for pratincole fans. The first Collared Pratincole for Shetland, and Scotland, was shot at Baltasound, Unst, on 16 August 1812. The second was seen on Fair Isle on 2 June 1971, the third at Belmont, Unst, on 3 July 1974. The fourth, on Fair Isle on 14–18 May 2017, was the first ever twitchable pratincole in Shetland, and greatly appreciated by those who went to see it, hawking majestically over the slopes above Easter Lother and the Wirvie Burn. Black-winged Pratincoles are even rarer - one was on Fair Isle on 18 May 1927 and shot the following day. There are no records of Oriental Pratincole, and three birds are considered as unconfirmed or pratincole sp. (Pennington *et al.* 2004).

Consequently, a message on the Shetland grapevine at 13:50 hrs on 11th August 2021 – to report a juvenile Black-winged Pratincole at Houbie, on Fetlar, *the previous day* – had Shetland's listers agog. It took an hour or so to establish that a) the report was genuine and b) the bird was still there. By then, there was very little time indeed to get the last ferry to Fetlar that would allow a same-day return. Still, it's surprising what you can do when there is a potential tick involved and several car-loads, plus half-a-dozen more (including me) aboard Phil Harris's boat from Lerwick, arrived on Fetlar at around 17:00 hrs. By this time it had emerged that the bird had been found by Alan Prescott and identified as a juvenile pratincole. Alan was visiting Fetlar and had reported the bird to BirdGuides and the Nature in Shetland

website on 11th. It transpired later that the pratincole may well have been present for a day or two before 10 August though.

The news for those early birders wasn't good: the pratincole hadn't been seen for more than an hour. More pairs of eyes had the required effect, however, and Phil Harris (again) found the bird in a close-grazed pasture just east of the Feal Burn. There, the bird performed pretty much faultlessly. Birders split into two groups, one at each end of the field, and the bird dutifully ran pretty much between the two groups for an hour, plucking insects from piles of dung and rarely having to do more than occasionally leap into the air on what was a dull afternoon with a gradually freshening south-easterly. Its behaviour was curiously reminiscent of a giant, long-winged Wheatear.

The bird was an immaculate juvenile, intricately patterned and elegant as they come. Someone described it on my Twitter feed as a 'poppet' and I knew just what she meant. Juvenile pratincoles

Plate 255. Black-winged Pratincole, Fetlar, Shetland, 12 August 2021. © *Robbie Brookes*

Plate 254. Black-winged Pratincole, Fetlar, Shetland, 11 August 2021. © *Roger Riddington*

are not especially easy to identify; there are a few subtle cues but realistically you need to see the underwing (black in this case), and this bird obliged on that first afternoon with a few short flights plus some wing stretching.

The bird remained in Fetlar until 30 August, and was enjoyed by a high proportion of the Shetland birding community. In subsequent days and in better weather it spent more of its time hawking aerial insects in more typical pratincole style. There was a good deal of speculation that the bird was the same individual as one seen in Møre & Romsdal in Norway on 4 August, but it wasn't possible to link the two records definitively.

Reference

Pennington, M. G. *et al.* 2004. *The Birds of Shetland*. Helm.

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Plate 256. Fife Bird Club sea-watching hide at Fife Ness, Fife, 17 September 2021. © *Jared Wilson*

Fea's-type Petrel in Fife, Angus & Dundee and North-East Scotland

J. WILSON, D. POINTON & I. BROADBENT

A Fea's-type Petrel was tracked by several observers between Fife, Angus & Dundee and North-East Scotland on the afternoon of 30 August 2021. Subject to acceptance, this will be the first record for the respective recording areas. Below is the story of this unique event, starting with Jared Wilson's account at Fife Ness.

The location of Fife Ness on the tip of a small peninsular jutting out into the outer Forth and Tay means that birds passing offshore and those exiting the Forth Estuary can pass by, the latter sometimes at very close range. It also has the excellent Fife Bird Club sea-watching hide which provides to FBC members comfortable seats and shelter from the elements (for information on membership of the Fife Bird Club, please visit www.fifebird club.org.uk). The main challenges with Fife Ness are that it faces east, meaning that in the morning you can be looking into the sun, and its low elevation means that birds can disappear behind wave troughs in moderate/heavy seas.

A combination of reducing family commitments and no work travel due to COVID-19 has provided me with the opportunity to get out birding more often, and to feel invested in a number of local patches in a way that I have not been for a long time. The superb Fife Bird Club community and associated Fife bird news 'WhatsApp' group have also been fantastically welcoming and a great way to get to hear about and contribute to bird sightings across the county (sorry, Kingdom!). One of my birding aims for late summer/autumn 2021 was to spend time sea-watching at Fife Ness, which is only a couple of miles from my home.

Sea-watching during June and July was unsurprisingly dominated by the locally breeding species (Gannet, Puffin, Guillemot, Razorbill, Fulmar, Shag, and Arctic, Common

and Sandwich Tern) streaming past Fife Ness on their commute between nesting sites in the inner Forth and foraging sites. There were also daily counts of several hundred Manx Shearwater during the middle of June, presumably from breeding populations in western Scotland.

August is the month when things traditionally start getting a little more interesting, with seabird passage proper underway and the potential for scarce or rare species increasing. Arctic and Great Skuas became regular at Fife Ness from early August, and Sooty Shearwater from around the middle of August, with all three species seen virtually daily until mid-September. I got into a pattern of dropping into the Fife Ness hide for a couple of hours whenever I had free time at the weekends or before/after work.

On 21 August, with few (zero) migrants at Kilminning earlier in the day, I decided to spend the late afternoon sea-watching at Fife Ness. The heavy rain showers forecast, and associated periods of reduced visibility, might result in a few seabirds being closer inshore than otherwise might be expected in the rather light onshore winds. One thing I was relatively confident of, I would see more birds sat in the hide than sat at home.

I arrived at the Fife Ness hide, which was otherwise deserted, and had set up my 'scope by 16:30 hrs. Sea-watching was rather quiet during the first half hour, a couple of Great Skuas and five Manx Shearwaters north. At 17:05 hrs as I was slowly scanning out from the hide a Great Shearwater materialised in and filled the field of view of my 'scope! It was very close in, just a little beyond the Fife Ness rocks, and as an added bonus the light was just perfect. It seemed to be in no hurry as it headed north, a few quick shallow wing beats interspersing glides low over the water's surface. The bird's large size, diagnostic dark cap contrasting with pale collar, pale fringed dark upperparts, dark tail with white patch at its base were all noted.

I watched the bird through my scope for about a minute and a half as it headed past north (the white patch on the rump obvious even at a considerable distance), before it finally disappeared behind the corner of the hide interior. I've seen large numbers of Great Shearwaters before, in Cornwall and South Africa, but the buzz from seeing this bird was comparable (I think because it was so unexpected and such great views) with the excitement of seeing my first in Cornwall about 30 years ago.

I put the news out on the local grapevine immediately in case birders along the coast to the north were able to pick it up, but unfortunately that was not to be. Early the following day however, as I parked the car at Fife Ness, I received a text message from Ken Shaw - he'd just had what was presumably the same Great Shearwater this time heading south, again just beyond the Fife Ness rocks!

The weekend was not quite done for quality sea-watching however. At 07:15 hrs on the 22nd, an adult summer Sabine's Gull lifted up into my 'scope's field of view just as Ken Shaw called "Sabine's Gull!", again just off the Fife Ness rocks! A gorgeously marked small gull, it drifted slowly north with a handful of Kittiwakes before landing on the sea about 300 m from the hide. The news was put out immediately and several birders from Fife were able to connect with bird over the following few hours.

During August 2021 there had been an impressive number of Fea's-type Petrels (Zino's Petrel *Pterodroma madeira*, Fea's Petrel *P. feae* or Desertas Petrel *P. deserta*) reported from north-east England. This seemed to be associated with prolonged periods of northerly winds pushing seabirds into the North Sea, weather which can also result in good numbers of skuas and shearwaters appearing. What was even more impressive was the ability of the birders in north-east England to track individual Fea's-type Petrels as they headed north. They seemed to invariably be seen in the afternoon and so by the time they got to Fife (assuming they kept going) it would be pitch black. This didn't stop the Fife bird grapevine from flagging whenever one was 'heading in our direction'.

On Monday 30 August, I had a break in my work related 'Teams' meetings and had the choice of going for a run or a sea-watch. Rather guiltily I chose the sea-watch and headed across to the

Fife Ness hide. There was a light force three NE breeze, high cloud, and very good visibility, none of which seemed particularly promising but perhaps there would be a few Sooty Shearwaters or skuas to keep me entertained.

The focus for sea-watching from Fife Ness at this time of year tends to be to the south of the hide as most birds are heading north so this approach maximises the amount of time a bird may be viewable. However, I had noticed during the previous few days that some shearwaters and skuas seemed to appear from further offshore, as if cutting across from the St Abb's area. I wondered whether such birds might be missed by focusing too far to the south, so concentrated my attention just south of perpendicular to the hide's orientation.

It was very quiet for the first half hour or so. An adult Little Gull, a Great Skua and 21 pale-bellied Brent Geese all heading north. At 13:55 hrs I noticed a seabird at *c.* 2 km flying north. My initial reaction was a shearwater, but its shape looked odd, and its flight was even odder. Within a few seconds the only species that I could attribute the bird's features to was a Fea's-type Petrel! My approach in situations when I have found what I believe to be something unusual is to continuously ask myself "why isn't it a...?" and run through all the feasible commoner confusion species, no matter how convinced I am of the identity, just in case. I went through the shearwaters, skuas and anything else that I could think of and dismissed them all, it was a Fea's-type Petrel.

The bird had a long narrow-winged shearwater-like appearance, with 'crooked' wings angled back at the carpal joint. Its flight was very distinctive with powered arcs which see-sawed to alternate sides of its general direction of travel, and it undertook this flight action throughout the four minutes or so that I watched the bird. The bird arced every five seconds of so, frequently reaching several metres above the sea surface, though the exact height was difficult to estimate. At times the banks were so sharp that the bird seemed to almost double back on itself, the result being that even though the bird was flying fast it was passing by more slowly than might be expected, and so allowed more prolonged views than would have otherwise been the case. The flight behaviour brought back memories of the only other 'Fea's' Petrel that I have seen, at Bardsey Island in September 1994.

The bird's size appeared similar to Manx Shearwater, though no other birds were present for direct size comparison. The upperparts including neck and head appeared all dark with no dark 'W' on upper wing visible, presumably due to light conditions and distance of bird. On the underparts, the body, chest and throat were white, with the white body contrasting sharply with the underwing which was all dark other than a white patch on the inner forewing, which flashed when the bird undertook particularly steep arcs. There was no indication of an obvious dark breast band (something that I was aware had been flagged for the recent record of Soft-plumaged Petrel from north-east England). However, the views were not sufficient to allow the bird to be identified beyond Fea's-type.

I must admit that it felt a little surreal sitting there and having such a cracking bird all to myself. As soon as I lost the bird from sight, I put the news out on the Fife bird grapevine and Twitter in case birders further up the coast might be able to pick it up as it headed north. I then returned home on a high, despite the afternoon of virtual meetings that awaited me, from where I was chuffed to see news coming through of what was presumably the same bird being seen from Montrose and then Aberdeen later in the day.

Sea-watching from Fife Ness during the first half of September remained good, with highlights being near daily records of Sooty Shearwaters (my highest day total was 40 on the 13th) and a couple of juvenile Long-tailed Skuas. Mid-month the winds swung around to the west and things have quietened down significantly. Whilst there is still a long way to go before the autumn is over, from a personal perspective it may need to deliver something rather extraordinary to beat the sea-watching in August!

Dan Pointon picks up the story from Angus & Dundee

Having recently moved to the Aberdeenshire coast, it was high on my agenda to spend some time sea-watching. Enthusiasm for this plan had

been bolstered by a deluge of sightings from the English North Sea coast, with Fea's-type Petrels seeming an almost daily occurrence! Unfortunately, though, rather than continue to follow the coast, scarce seabirds seem to hit something of a black hole once they pass Holy Island, with North Ronaldsay being the only place on the Scottish 'east coast' where scarcer seabirds are seen with any regularity. This is not due to lack of effort however - any quick glance at bird news from Fife during late summer or early autumn would reveal almost continuous effort from Fife Ness. It made sense that sightings from there may provide some indication of likely passage off the coast near me, and as such had been piggy-backing on their tenacity and patience to help me predict when it might be worth a look further north. So far this had yielded just a few passing Sooties, but soon their info was to become a whole lot more vital!

The run of English east coast sea-watching was continuing at pace, and at 11:00 hrs on 30 August 2021, a Fea's-type Petrel was seen going north past Whitburn. This piqued my interest as there would likely be enough daylight to see it off the Scottish coast on the off-chance it decided to stay inshore. I made the plan to head out for an evening sea-watch and continued an otherwise normal day. Just after 14:00 hrs a message on the Fife Bird News Whatsapp pinged in from Jared Wilson. Hoping this might be something to further boost my prospects for the evening, what I saw way surpassed my expectations and I was astounded to see he had seen a Fea's-type Petrel past Fife Ness. After some panicking about which observation point might give the highest chance of intercepting the bird, I decided on Fishtown of Usan, about 15 minutes' drive from me. Some quick measuring on Google maps suggested a straight-line distance of 42 km from Fife Ness to Fishtown, which meant if the bird was going to come past, it would be around 15:00 hrs.

In the car inside two minutes, I was at Fishtown by 14:20 hrs. I knew another local birder Gus Guthrie had been on site since dawn, though at the current time wasn't answering his phone! I searched frantically for him so we could sit and wait together; service is poor at the site and I was concerned he might not even know what was possibly on the way. Eventually he noticed my calls and I made my way down to his chosen spot. Gus was quick to tell me he hadn't seen a single shearwater thus far in his 7-hour vigil. Even more concerning was the fact there had been 18 Sooties past Fife Ness in the same period, and with none of those birds reaching Fishtown, I began to think maybe my optimism the bird would inevitably pass us too was misplaced.

As the time approached 15:00 hrs and despite the fact we were now in 'the window' when I expected the bird might pass, the adrenaline from the initial the news and the prospect of a sighting had somewhat worn off. Sometimes it is too easy to apply false logic to bird behaviour, and in this case the lack of Sooties past Fishtown was certainly playing on my mind. Nevertheless, we both continued scanning, and at 15:08 hrs I picked up the bird coming quickly north. Initially it was moving quickly and relatively low to the water with several powerful wingbeats, and I called to Gus; "I've almost certainly got the Fea's!" A few seconds later the bird arced up, mantle on, giving the impression of a small 'large shearwater', before twisting to show a white belly and dark underwing. "IT'S DEFINITELY THE BIRD" I shouted to Gus, before continuing to belt out directions until after what seemed like an age, he finally said he was on it. We both sat and watched as it seemingly effortlessly pushed north at speed, performing relatively low arcs during which it would twist and turn, interspersed with low glides over the surface often accompanied by several clipping wingbeats. Viewing became distant once the bird passed the rocks out towards Scurdie Ness, and it became visible only when shearing up above the families of Gannets hugging the water in the foreground.

I knew people were stationed further north in the hope it would be headed their way, and frantically sent out messages to mobilise to the coast as the bird would surely be passing them within the next hour. The thing I've found with Fea's-type Petrels is the short time frame for which you get to observe them inevitably leaves you wanting more, every sighting brings the rush and adrenaline of seeing a totally new bird, and as such I dashed to Girdle Ness in the hope of intercepting the bird once more. Alas it was

not to be, and I missed the bird by literally a matter of seconds. Having moved to the area with expectations I may be able to bolster my Scottish list with sightings of tough Scottish birds such as Balearic, Great or even Cory's shearwaters, I had never dreamed the first addition might be a *Pterodroma*. Huge thanks are due to Jared Wilson for his seemingly never-ending assault on Fife's birding hotspots, and for his prompt dissemination of news. After things had calmed down and I was back home, some analysis of the distances involved made it clear the Scottish bird had to be different to the Whitburn individual, quelling once again the notion that it might be possible to track rare English sea-birds up into Scottish waters.

Finally, Ian Broadbent details the sightings from North-East Scotland

News of Jared Wilson's sighting of a Fea's-type Petrel from Fife Ness on 30 August 2021, followed by Dan Pointon and Gus Guthrie's sighting at Mains of Usan in Angus, gave encouragement that it would end up passing Girdle Ness. The timings between Fife Ness (14:00 hrs) and Mains of Usan (15:08 hrs) suggested a speed of around 43 km/h, and at that rate we were expecting the bird to arrive at Girdle Ness (approximately 53 km from Usan) sometime between 16:15 hrs and 16:30 hrs.

By 16:05 hrs when I arrived simultaneously with Phil Crockett at the Girdle Ness foghorn there were three other birders present, Mark Lewis, Hugh Addlesee and Nick Littlewood, joined shortly after by Pete Winn. Wind conditions were a light northerly with a moderate swell, and the sky was overcast with the sea looking pretty greyish and dark, although it was lighter to the south.

After ten minutes of scanning, at around 16:15 hrs, I picked up a bird well south of Girdle Ness and on a line to the right but well in front of the three westernmost Kincardine offshore wind turbines, at about 1,800 m from our position. I thought initially "is this a Manxie?", but it was flying in a less frenetic manner than a Manx Shearwater that had just gone past. It was low to the water and initially looked just dark grey from the side with a dark grey head; the flight was less direct than Manx Shearwater, with more gliding than a Manx but then occasional deeper loose and 'flappier' wingbeats. Larger than a Manx, but smaller and slimmer than a Sooty Shearwater, its flight pattern rendered it immediately distinctive. Suddenly it veered up, rearing in an arc above the horizon and it flipped sideways so that it was perpendicular to the water, showing its dark grey upperside and the long narrow pointed wings, and I said "that's flying like a *Pterodroma*". I shouted directions and Phil Crockett got onto the bird almost straight away - as he did so, it then arced up above the horizon again, but this time showing the underparts and allowing the black underwing to be seen clearly, contrasting sharply with the bright white belly and rest of the underparts. The tail was pointed, with the white reaching to the tip of the underside of the tail. At that point Phil and I both said "that's it" or words to that effect. The head pattern was not seen clearly but appeared dark and greyish, and no breast band was apparent (although this would have been virtually impossible to discern at that range). The wings were proportionately long and narrow, with a pointed tip and noticeable bend at the carpal joint. The body was thin and slender, emphasised by the pointed tail shape. It then dropped back below the horizon and disappeared behind the swell. This initial observation lasted no longer than about 20–30 seconds but Phil and I were both happy that the bird involved was a Fea's-type Petrel and consistent with our previous experience of the species group.

Dan Pointon arrived, fresh from a rapid dash up from Angus, and I then picked up the bird again twice briefly at around 16:20 hrs again at some distance, well to the north of the turbines. It briefly came above the horizon twice more, but once it went low to the water again it was quickly lost as essentially we were looking for a bird with dark grey upperparts against a dark grey sea. Phil also managed to pick up the bird twice more as it continued northwards; the last sighting was just as it reached some marker flags, but unfortunately, despite a brief arc and flash of the underwing, it was lost to view again. A final possible sighting a few minutes later turned out to be erroneous, much to everyone's disappointment, compounded when news reached us at 16:42 hrs that it had just been seen passing Donmouth by Roddy Mavor and Ian Gordon.

Ian Gordon commented on the Donmouth sighting: 'Roddy called up the bird which was flying north at around 1,000–1,200 m just beyond the line of oil support vessels anchored offshore. Luckily I was scanning the same area as Roddy and it flew into my scope view almost immediately. I could see it was a seabird a bit larger than a Manx Shearwater, it had long pointed wings and tail, the upperparts and upperwings looked uniformly dark slaty grey but not black like Manx. The head and neck appeared dark grey. It was flying rapidly and after several flaps veered off to the right banking and allowing the underparts and underwing to be seen. The underwings were dark blackish and contrasted sharply with the white underparts of the bird. The bird continued to fly on in this manner flying strongly then veering off in a banking glide. We watched the bird for at most a couple of minutes losing it as it went behind one of the supply boats and we couldn't pick it up again on the other side'.

After such a frustrating experience, I next went to Girdle Ness on 2 September in a rather gloomy state of mind, although I knew that a Long-tailed Skua had been seen about an hour earlier. I arrived at the foghorn just after 18:10 hrs, missing a second Long-tailed Skua by a few minutes - Andrew Whitehouse and Craig Gordon were already there. Two or three Sooty Shearwaters and a couple of Manxies went through north, also a Great Skua in near flat calm conditions in good light, which made sea-watching much easier than the previous session. At 18:38 hrs I picked up a bird shearing and gliding in the mid-distance, to the right of two prominent yellow marker buoys south-east from the foghorn. It took a few seconds to process - smaller than a Fulmar, maybe slightly larger than a Manx, with dark grey head, greyish upperparts, thin wings - surely not again? Andrew and Craig got onto it fairly quickly as it went behind the outer yellow buoy. At this point, I'd seen the bright white belly contrasting with the blackish underwings, and the pointed tail which was white below and light grey above - contrasting with the darker grey upperwings and lower back making the bird appear almost tail-less from above - and I got a good appreciation of the long, pointed, narrow wings slightly angled at the carpal joint. I knew by this time I was onto another Fea's-type Petrel but I said to the guys "tell me I'm not going mad, tell me that's what I think it is!" and Andrew calmly said something like, "well, it's a Fea's-type isn't it!". The relief of getting everyone onto it so quickly was almost overwhelming - I came away from my 'scope and put the news out, but quickly got back onto the bird as it progressed northwards. Its long arcing and swooping glides were interspersed with periods of vigorous flapping - these were not as frenetic as Manx Shearwater, and probably closer in flight style to a Great Shearwater but with looser, more elastic wing beats. It went past a Fulmar at one point and the Fulmar was obviously bigger than the Fea's-type, with a white head, sturdy build and white underwings. The head pattern on the Fea's-type was seen well enough to detect a darker patch around the eye, contrasting with a slightly paler forehead, with the top of the head light grey merging into the mantle, which was slightly paler grey than the wings. The chin was white but there was no obvious breast band although there was a grey area on the side of the neck. The bill was black and stubby but no real structural details of this were seen. Andrew stayed onto it the longest, and it was almost 18:44 hrs by the time he lost it. It was heading strongly north but not really whizzing through, giving us ample time to soak it in.

We were still in a bit of shock at 18:52 hrs when Craig noticed a group of three shearwaters approaching - Andrew shouted to us to get on one of the birds as it looked interesting, and sure enough it was a Balearic Shearwater, the first I have seen in Scotland. Andrew later posted in a tweet that it was his 'best ever sea-watch at Girdle Ness' and it is hard to argue with that!

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Plate 257. Pallid Harrier, Kilminning, Fife, 19 September 2021. © *George Dunbar*

Pallid Harrier, Kilminning, Fife, 19 September 2021 – first Fife record

M. JACKSON

Sunday 19 September 2021 would be a welcome day off for me in my busy university life, and so, seeing the decent weather forecast on the east coast, my friends George Dunbar and Dan Burt organised a day out birding with me around Fife Ness and Kilminning. George and I had been messaging on Twitter the previous evening, each taking guesses at the species of migrants we were hoping to find: perhaps a Common Rosefinch or a Barred Warbler, or maybe even one of the leaf warbler species. We were excited.

Dan and George arrived at Kilminning before me, picking up two Sooty Shearwaters and a Grey Phalarope on a sea-watch - Grey Phalarope being a fantastic record, which I was disappointed not to have seen myself. When I arrived, I met George and Dan by the old toilet block. We scoured the trees and bushes of Lower Kilminning for any passerines, but it was much quieter on the whole than we had anticipated. A Garden Warbler and a male Blackcap were feeding in the Elders, where we had expected to find a Barred Warbler.

Surprised by the lack of passerines, we decided that perhaps a sea-watch would be more productive, as I still needed Sooty Shearwater for my year list, and so we moved to the end of the site and turned our gaze upon the vast expanse of sea before us.

It wasn't long before George put us on to a skua, which we followed as it flew south - it soon became apparent that this was an Arctic Skua. I remember following the skua with my scope until it changed its course and seemed to gain height, as if influenced by the sight of something else. Another dark bird appeared in my scope, about one mile out at sea. There was a silence among the three of us as we had all spotted it and were trying to work out what it was. Was it another skua? No, this was definitely a raptor species.

All of a sudden, I started getting excited as I took my guess that it was a Marsh Harrier, as I had seen one of these on a sea-watch before. I could tell by the V-shaped wing-body angle and frequency of wingbeats that it certainly wasn't a Buzzard. It was then suggested that this could be a Short-eared Owl, which then seemed the most likely possibility to me, as I had seen three Short-eared Owls come in off the sea from this exact spot over the last two years - Long-eared Owl was also a possibility.

We stayed on the bird for a good five minutes as it seemed to be heading straight for us, presumably having just travelled straight from the west coast of Denmark. As it came closer, more and more plausible guesses came through, such as Honey-buzzard, as there had been many records the previous day along the east coast of England. George was the first to spot that it had a ring-tail - indicating that this was indeed a harrier species. Now we had the options of Hen Harrier, Montagu's Harrier, or the much rarer Pallid Harrier. "It couldn't be a Pallid could it? Imagine if it was a Pallid!" I suggested jokingly, or rather not jokingly, as I was getting more and more nervous with the mystery raptor approaching the coast. Here we go...

The three of us frantically tried to get as much footage as possible of the bird through our scopes, although the nerves got the better of me as the colour and plumage of the bird became visible, and I gawped in awe. "Count the fingers!" I remember repeating deliriously over and over.

"I think it's got four fingers, you know!" George shouted in disbelief. "It's orange! It's bright orange!" George and Dan were exclaiming. I remember seeing the bird through my scope and seeing the clean orange underparts and the bold facial markings, comprising of the complete collar and bright white spot above the bill. The tail was remarkably long and narrow. Fortunately, I had seen juvenile Pallid Harrier in the UK before - the bird quartering fields at Bank End, Lancashire in September 2018 - so the 'jizz' of this bird did indeed seem familiar. The three of us were all on the same page, as it finally flew straight over our heads, interacting with a flock of Starlings, and made its way inland. We all stared at each other in disbelief. George was frustrated as this was the one day he'd decided not to bring his camera - he'd have got 'frame-filling' shots, as he put it.

Plate 258. Pallid Harrier, Kilminning, Fife, 19 September 2021. © *George Dunbar*

Plate 259. Pallid Harrier, Kilminning, Fife, 19 September 2021. © *George Dunbar*

But it soon became clear as we reviewed screen-grabs from George's footage and Dan confirmed the ID features that we had indeed just encountered a Pallid Harrier. That feeling is a tough one to describe, as it is a complex mix of excitement and pride, but also anxiety and adrenaline. Perhaps 'euphoria' is the closest word I can find to describe it. Now, I would finally understand what birders mean when they say that their hands were shaking uncontrollably...

We ran to the adjacent disused airfield, as this is where raptors have tended to go in the past when they have arrived from over the sea. The first thing I needed to do was get the news out. I got straight on to the Fife Bird News WhatsApp group and put that we had just had a ringtail harrier, possibly Pallid, in off the sea at Kilminning. George sent an over-exposed screengrab of the harrier in flight and asked for confirmation that this was Pallid - to which a stream of replies from experienced birders, including SOC stalwarts Will Creswell and Ken Shaw, confirmed our suspicions. A very sobering message came from John Nadin that this was mainland Fife's first ever record of Pallid Harrier (the Isle of May claimed the first Fife record in 2015), and I still remember reading this fact out to George and Dan and seeing their jaws drop in synchrony.

The three of us were immersed in our phones, responding to messages from the chat and looking at our pictures and videos, when I decided to look up and see if the bird had reappeared over the airfield. Suddenly, I saw the bird heading along the fence line, heading straight for us - I shouted "LOOK! It's here again!" and the bird came within 10 m of us before doubling back on itself and heading back out over the airfield, showing off its bright orange undercarriage and wing pattern. A flurry of expletives followed.

The bird made a bee-line diagonally across the airfield, heading west. I saw it very distantly, a glowing orange beacon in the midday sun, but unfortunately it was lost from view, and this would be the last that was seen of the harrier.

It was frustrating that the bird didn't stay for others, especially for local birders who work this patch so hard for moments just like the one we had experienced - I almost felt quite guilty - but it was very much a case of right place, right time for us. Having said this, without George's calm composure to be able to get such an important record shot which confirmed the bird's identity (and we expect the record to be accepted by the BBRC), this bird might have slipped through the net. A life tick for both George and Dan, and an exceptional find for all three of us, this would indeed be a moment to remember in all our birding careers. We revelled in our Twitter glory as we announced that we had just found a Pallid harrier on a sea-watch in Scotland - not something very many birders can say?

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SCOTTISH BIRD SIGHTINGS

1 July to 30 September 2021

S.L. RIVERS

Records in Scottish Bird Sightings are published for interest only. All records are subject to acceptance by the relevant records committee.

The following abbreviations for recording areas are used: Angus & Dundee - A&D; Argyll - Arg; Ayrshire - Ayrs; Borders - Bord; Caithness - Caith; Dumfries & Galloway D&G; Highland - High; Lothian - Loth; Moray & Nairn - M&N; North-East Scotland - NES; Outer Hebrides - OH; Perth & Kinross - P&K; Shetland - Shet; Upper Forth - UF.

Some exceptional seawatching highlights were to be had off the east mainland and Orkney in August/September, while an eclipse drake Baikal Teal on Fair Isle is a potential addition to the Scotttish List. Otherwise, the early autumn was most notable for a Yellowlegs double at Strathbeg, a Red-eyed Vireo on Barra, and a general lack of passerine migrants, particularly Yellow-browed Warblers.

Grey-bellied Brant: a returning bird showing characteristics of this form was at Munlochy Bay (High) on 26 September and nearby at Udale Bay RSPB Reserve (High) on 27 September. **Todd's Canada Goose** (*form interior*): one was near Bornish/Kildonan, South Uist (OH) on 25–27 September. **Taiga Bean Goose:** one was at Udale Bay RSPB Reserve (High) on 27 September. **Tundra Bean Goose:** four flew over Hoswick, Mainland (Shet) on 29 September. **Ruddy Shelduck:** one was at Findhorn Bay (M&N) on 7–13 July; four at Biel Burn, Belhaven Bay, Dunbar (Loth) from 24–31 July; one at Montrose Basin (A&D) from 25 July to 19 August, and again from 7–16 September; two at Tullibody Inch (UF) on 1–15 August (with two escaped Cape Shelducks), and one at Udale Bay RSPB Reserve (High) on 26 September. **Baikal Teal:** an eclipse drake was on Fair Isle from 29 September into October (potential first for Scotland). **Ring-necked Duck:** a female was at Loch Bhasapol, Tiree (Arg) on 20–27 September; a female/immature drake at Loch a' Bhursta, near Torlum, Benbecula (OH) on 23–24 September; and drakes at Loch Stiapabhat, Lewis (OH) on 24th, with five present on 27–28th, and four still on 29th; at Loch of Bosquoy, Mainland (Ork) from 25th into October; at Loch a' Phuill, Tiree on 26–27th; at Rescobie Loch, near Forfar (A&D) on 27th; at Loch Oire, near Elgin (M&N) on 27–29th, and one at Loch Braighe na h-Aoidhe, near Melbost, Lewis (OH) on 28 September. **Lesser Scaup:** a juvenile was on North Ronaldsay (Ork) on 17–25 September. **King Eider:** single 2cy drakes were near Baltasound, Unst (Shet) from June to 16 August, with it or another at Basta Voe, Yell (Shet) on 30 August and 8 September; at Wadbister Voe, near Laxfirth, Mainland (Shet) from 12 September into October; and an eclipse drake in Clift Sound, East Burra (Shet) on 20–29 September. **Surf Scoter:** single drakes were off Blackdog (NES) on 14–16 July; a 2cy bird at Kinnaber Links, near Montrose (A&D) from 20 July to 4 August, on 19–22 August, with two on 7 August, and one on 2–16 September, with three on 6–8th and two on 15th; off Musselburgh Lagoons/Fisherrow (Loth) on 13th into October; off Lunan Bay (A&D) on 25th; one flew past Fife Ness (Fife) on 25th, and one was at Bay of Skaill, Mainland (Ork) from 28 September into October.

White-billed Diver: one was in Sandside Bay, near Reay (Caith) on 1 July. **Wilson's Petrel:** singles were 'At Sea' 42 miles north of St Kilda seen from R.V. Celtic Explorer on 15 Jul, and 'At Sea' NW of Fethaland, North Mainland (Shet) on 10 August. **Fea's/Desertas Petrel:** one flew north past Fife Ness (Fife) on 30 August at 14:00 hrs, past Fishtown of Usan (A&D) at 15:11 hrs, past Girdle Ness, Aberdeen (NES) at 16:15–16:20 hrs and Donmouth, Aberdeen (NES) at 16:42 hrs - the first time one has been tracked up the east coast of Scotland after sightings in NE England; singles flew past Girdle Ness on 2 September; past North Ronaldsay (Ork) on 2nd, 4th, 6th and 7 September, with two on 3rd, and one past Gallan Head, Lewis (OH) on 6 September. **Cory's Shearwater:** singles flew past Breibhig, Barra (OH) on 5 August; past Mull of Kintyre (Arg) on 14 August; past Westhaven, near Carnoustie (A&D) on 22 August; past North Ronaldsay (Ork) on 4 September, and one flew south past Kinnaird Head (NES) on 12 September. **Great Shearwater:** singles flew past Strathy Point (High) on 18 August; north past Fife Ness (Fife) on 21 August and south on 22 August; past Ardvule Point, South Uist (OH) on 6th and7 September, and two were seen from the Mallaig–Lochboisdale ferry (High–OH) on 20 September. **Balearic Shearwater:** singles flew north past Battery Head, Peterhead

(NES) on 29 July; south past Saltcoats (Ayr) on 12 August; south at Eyemouth (Bord) on 22 August; past Collieston (NES) on 2 September; north past Girdle Ness, Aberdeen (NES) on 2 September; past Muchalls (NES) on 2nd; past Fishtown of Usan (A&D) on 4 September (with a probable there on 3rd); two past North Ronaldsay (Ork) on 6th, and one past Kinnaber Links, near Montrose on 8 September.

Pied-billed Grebe: the returning adult male was still at Loch Feorlin, near Lochgilphead (Arg) to 4 September at least. **Glossy Ibis:** one flew east past Leverburgh, Harris (OH) on 18 September, with possibly same at Loch Stiapabhat, Lewis (OH) on 28 September. **Spoonbill:** one was still at Loch of Strathbeg RSPB Reserve (NES) to 3 July; two were at Findhorn Bay (M&N) from 8 July to 1 August; singles at Montrose Basin (A&D) on 3rd August; on the Ythan Estuary (NES) from 8–22 August; with two at Findhorn Bay again from 19 August to 21 September, and one at Skinflats Lagoons RSPB Reserve (UF) on 24 September. **Great White Egret:** singles were at the Garnock Estuary, Irvine (Ayrs) on 8 September; at Lochwinnoch RSPB Reserve (Clyde) on 10–28 September; at Moffat (D&G) on 12 September; at Barassie (Ayrs) on 15th; at Montrose Basin (A&D) on 17–29th; at Saltcoats (Ayrs) on 18th; at Eastriggs (D&G) on 19th; at Walls, Mainland (Shet) on 20–21st; at Caerlaverock WWT Reserve (D&G) on 27th; at Sandwater, South Nesting, Mainland (Shet) from 27 September into October.

Honey-buzzard: singles were over Prestwick (Ayrs) on 3 July; at Holm, Mainland (Ork) on 8 July; at St Ninian's Isle (Shet) on 10 July; on Fair Isle on 10–24 July; at Baltasound, Unst (Shet) on 27 July; at Northbay, Barra (OH) on 9 August - first for the island; at Sumburgh Head, Cunningsburgh and Bakkasetter Mainland (Shet) on 18 September; over the Isle of May on 18 September, and over Foula (Shet) on 20 September.

Pallid Harrier: single juveniles were at Crail Airfield (Fife) on 19 September, and at Toft, Mainland (Shet) on 25 September. **Black Kite:** one flew over Kirkgunzeon, near Dalbeattie (D&G) on 16 August. **Crane:** one flew over Carnan, South Uist (OH) on 22 July; two were at Meikle Loch, (NES) on 14 August; four (2 ads) were at Loch of Strathbeg RSPB Reserve (NES) from 28 August to 10 September, with three (one ad) on 12–19 September; five at Newburgh (NES) on 20th; nine at Loch of Strathbeg on 22nd (2 juvs), with three again (one ad) from 23 September into October, and three (two ads) were at Newton Craigmaud/A98, near New Pitsligo (NES) on 7 September.

Stone-curlew: one was on Fair Isle on 11 July. **Avocet:** one was at Howmore River, South Uist (OH) on 20 July. **American Golden Plover:** singles were at Baltasound, Unst (OH) on 26 July; on North Ronaldsay (Ork) on 14–27 August; at Sandwick, Mainland (Shet) from 26 August

Plate 260. Stone-curlew, Skadan, Fair Isle, 11 July 2021. © *Dan Gornall*

to 5 September; on Sanday (Ork) on 16–20 September, and on North Ronaldsay on 20–21 September. **Baird's Sandpiper:** one was at Loch Paible, North Uist (OH) on 16–19 September. **White-rumped Sandpiper:** singles were at Pool of Virkie, Mainland (Shet) on 22–24 July; at Aberlady Bay (Loth) on 26 August, and at Skinflats Lagoons RSPB Reserve (UF) on 7 September. **Buff-breasted Sandpiper:** singles were on Fair Isle on 1 September; at Bornish, South Uist (OH) on 11–23 September, with two on 24–25th; on North Ronaldsay (Ork) on 13 September, 17th and 25th; at Ormiclate, South Uist on 14th, with two there on 20–25th, and one still on 26th; at Balranald RSPB Reserve, North Uist (OH) on 15th; at Balnakeil (High) on 16–17th; on North Ronaldsay on 17–27th (ringed 27th - only second time one done in Scotland), and on Sanday (Ork) on 18 September. **Pectoral Sandpiper:** singles were at Udale Bay RSPB Reserve (High) on 15 July; on Tiree (Arg) on 4 August; at Loch an Eilein, Tiree on 27 August, and at Auchlossan (NES) on 29th, and at Alturlie Point (High) from 31 August to 10 September. About 60 further individuals in September, mostly in the north and west, and singles, except for peaks of three at Bornish, South Uist (OH) on 11th and 14th; three at Loch of Strathbeg RSPB Reserve (NES) on 17–20th, and four at Frankfield Loch (Clyde) on 26 September. **Semipalmated Sandpiper:** singles were near Gallanch/Cliad Beach, Coll (Arg) on 22–24 September, and at Clachan, Tiree (Arg) on 23–26 September. **Long-billed Dowitcher:** a juvenile was at Loch Bee, South Uist (OH) on 19–22 September, and one flew over Grenitote, North Uist (OH) on 19 September. **Great Snipe:** one was at Loch of Brow, Mainland (Shet) on 15 September, and one near Houbie, Fetlar (Shet) on 29 September. **Grey Phalarope:** one was seen off the Oban–Barra ferry (Arg/OH) on 26 July, and one flew south past Kilminning (Fife) on 19 September. **Lesser Yellowlegs:** singles were on North Ronaldsay (Ork) on 7–9 September; near Lochmaddy, North Uist (OH) on 17th; at Loch Stiapabhat, Lewis (OH) on 29th into October, and at Loch of Strathbeg RSPB Reserve (NES) from 30 September into October. **Greater Yellowlegs:** one was at Loch of Strathbeg RSPB Reserve (NES) from 28 September into October. **Black-winged Pratincole:** a juvenile was at Funzie, Fetlar (Shet) from 10–30 August - second record for Shetland.

Sabine's Gull: singles were in Yell Sound (Shet) on 10 August; off North Ronaldsay (Ork) on 19 August; off Fife Ness (Fife) on 22nd; off St Andrews (Fife) on 25 August; off Inverbervie (NES) on 1st and 4 September; off Tyninghame, Dunbar (Loth) on 6 September; at Loch Fleet (High) on 7th; off the Ullapool–Stornoway ferry (High/OH) on 16th; off Ullapool (High) on 22nd; off Strathy Point (High) on 22nd; with nine past there on 23rd; off the Lochmaddy–Uig (OH–High) ferry on 24th; off the Ullapool–Stornoway ferry, at Duntulm, Isle of Skye (High) and off Maidens (Ayrs) all on 29th, and lingering off Girdle Ness, Aberdeen (NES) on 30 September. **Bonaparte's Gull:** one was still at Norwick,and later Baltasound, Unst (Shet) from June to 25 August at least. **Mediterranean Gull:** remains much under-reported away from the Firth of Forth, but singles were noted off Corran Ferry (High) on 5 August; Chanonry Point (High) on 6 August, and at Lunda Wick, near Westing, Unst (Shet) on 27–30 September. **Glaucous Gull:** very low numbers noted - seven reported in July, all singles on the Outer Hebrides except for a sub-adult at the Lossie Estuary (M&N) on 11th, and a juvenile at Brora (High) on 16 July. At least five in August from NE Scotland, Moray & Nairn and the Outer Hebrides, all singles except for two on the Lossie Estuary on 9th. In September nine were reported, from Ayrshire, Moray & Nairn, North Uist (OH) and Shetland, all singles except for two on the Lossie Estuary on 4th. **Iceland Gull:** extremely low numbers noted - an immature was at Loch Sandary, North Uist (OH) on 22 July; one at Butt of Lewis, Lewis (OH) on 7 August, and a second-winter at Thurso (Caith) on 15 September. **Yellow-legged Gull:** an adult was at Gourock (Clyde) on 3 July. **Black Tern:** singles were off Whitehills, near Banff (NES) on 2 August; at Spiggie /Quendale/Boddam, all Mainland (Shet) from 7–14 August; on Yell (Shet) on 9 August; off Scurdie Ness (A&D) on 10 August; two on the Ythan Estuary (NES) on 14–19th; one at Donmouth, Aberdeen (NES) on 21–25th; off Girdle Ness, Aberdeen on 22nd; at Spey Bay (M&N) and off Pathhead, Kirkcaldy (Fife) on 23 August, and two off Skateraw (Loth) on 30 August. Up to 14 noted in September in east Scotland from Orkney to Lothian, all singles except for three off Hound Point (Loth) on 5th, and four at Outhead, St Andrews (Fife) on 24 September. **Pomarine Skua:** just five singles reported in July, from Fife, NE Scotland (3) and Barra (OH). About 40 noted in August, from Shetland to Borders and Argyll, mostly singles, but with peak counts of four off Embo (High) on 17th; three off Fort George (High) and three off Nairn (M&N) on 18th, and three off Chanonry Point (High) on 30 August. About 80 noted in September, from Orkney to Lothian and Ayrshire, mostly singles, but with peak counts of 16 past Hound Point (Loth) and five past Fife Ness (Fife) on 2nd, and 12 past Strathy Point (High) on 23 September. **Long-tailed Skua:** poor numbers - just five in July, from Shetland to Lothian, including the long-stayer at Boddam, Mainland (Shet) from May. In August, the Boddam bird remained to 14th, with around 20 others from Shetland to Borders and Vatersay (OH), all singles

except for three at Eyemouth (Bord) on 1 August. About 37 noted in September from Orkney to Lothian and Barra (OH), mostly singles except for peaks of nine at Hound Point (Loth) on 2nd, and three past North Ronaldsay (Ork) on 25 September.

Turtle Dove: singles were at St Boniface, Papa Westray (Ork) on 13 August; at Balivanich, Benbecula (OH) on 18 August; at Baltasound, Unst (Shet) on 4–5 September; on Fair Isle on 12 September; at Aith/Houbie, Fetlar (Shet) on 16–23rd; at Grenitote, North Uist (OH) on 19th, and at Kilmuir, Isle of Skye (High) on 27–30 September. **Snowy Owl:** an adult female was still on Hirta, St Kilda (OH) from June into October, and an adult male on Ben Macdui (NES) from 27 August to 21 September. **Nightjar:** one was on Out Skerries (Shet) on 25–27 September. **Bee-eater:** one flew over Baugh, Tiree (Arg) on 22 August. **Hoopoe:** singles were at Paxton, near Burnmouth (Bord) on 25–30 July; near Tingwall, Mainland (Shet) on 13–14 September; on Bressay (Shet) on 17–18 September; on Noss (Shet) on 23rd, and at Haddington (Loth) on 25 September. **Wryneck:** singles were at Scatness, Mainland (Shet) on 22 August; at Geosetter, Mainland (Shet) on 29 August; at Channerwick, Mainland (Shet) on 6 September; on Fair Isle on 6th, 13th and 18 September; on Sanday (Ork) on 13th; at Skaw, Whalsay (Shet) and at Foveran (NES) on 15th; at Gulberwick, Mainland (Shet) on 18th; at New Grunasound, East Burra (Shet) on 20th, and at Walls, Mainland (Shet) on 29 September. **Hobby:** singles were on Benbecula (OH) on 12 July; at Loch Leven RSPB Reserve (P&K) on 23 July; at Manderston House, near Duns (Bord) on 25th; near Skye Bridge/Kyle of Lochalsh (High) on 31 July; at Tyninghame Bay (Loth) on 9th and 17 August; at Cawdor (High) on 23 August; at Morton Lochs NNR (Fife) on 1 September; at Roundyhill (A&D) on 2 September; at Stevenston Point (Ayrs) on 9th; near Strathclyde Loch (Clyde) on 13th; at Northbay, Barra (OH) on 15th; at Irvine/Bogside Flats (Ayrs) on 18th; at Halligarth, Unst (Shet) on 19th; on Fair Isle on 19–20th; at Fife Ness (Fife) on 21st; at South Nesting, Mainland (Shet) on 23rd; and at Turnberry Point (Ayrs) and at Crailing (Bord) on 28 September.

Red-backed Shrike: singles were on Fair Isle on 6–13 August, with two there on 11–12th; at Girdle Ness, Aberdeen (NES) on 7–9 August; at Brough, Whalsay (Shet) on 13th; at Rerwick, Mainland (Shet) on 17th; at Corby Loch (NES) on 19–24th; at Northwall, Sanday (Ork) on 28 August; and over 15 were noted in September, all singles on Shetland/Fair Isle except for one at Cleatt, Barra (OH) on 11–12 September. **Woodchat Shrike:** an adult male was on Fair Isle from 9 September into October, and a first-winter at Aith, near Voe, Mainland (Shet) on 30 September into October. **Red-eyed Vireo:** one was at Gleann, Barra (OH) on 27 September. **Golden Oriole:** one was on Fair Isle on 26 September. **Short-toed Lark:** one was on Hirta, St Kilda (OH) on 29 September.

Yellow-browed Warbler: after years of plenty there was a remarkable drop in numbers this autumn - the first were seen in September, from 16th with over 95 reported, all on the Northern Isles except for two at St Regulus Church, Cromarty (High) on 26th, and with peaks of 10 on Foula (Shet) and eight on Out Skerries (Shet) on 29 September. **'Siberian' Chiffchaff** (*P.c. tristis*): singles were noted at Hoswick, Mainland (Shet) on 3–10 September, and at Sandwick, Mainland (Shet) on 10 September. **Greenish Warbler:** singles were on Noss (Shet) on 10 August; on Out Skerries (Shet) on 13 August; at Collieston (NES) on 22nd; on Foula 22–30 August (all Shet); at Ardmair Point (High) on 28 August; at Sumburgh Hotel, Mainland (Shet) on 18–20 September, and at Walls, Mainland (Shet) on 30 September. **Arctic Warbler:** one was on Fair Isle on 27 August, and two there on 28th; then singles at Boddam, Mainland (Shet) on 10 September; at Quendale, Mainland (Shet) on 11–15 September, with two there on 13–14th; at Northwall, Sanday (Ork) on 12th; at Balinoe, Tiree (Arg) on 12th; at Aithness, Fetlar (Shet) on 12th, and one on North Ronaldsay (Ork) from 29 September into October.

Great Reed Warbler: one was at Quendale, Mainland (Shet) on 29 September. **Paddyfield Warbler:** one was at Ham, Foula (Shet) on 26 September. **Blyth's Reed Warbler:** singles were on North Ronaldsay (Ork) on 12 August; on Fair Isle on 14–16 September; on Foula (Shet) on 20–21 September; near Tresta, Fetlar (Shet) on 25th, and at Gourie, Isle of Bressay (Shet) on 28 September into October. **Marsh Warbler:** singles were at Norwick, Unst (Shet) on 26 July; at Sandwick, Mainland (Shet) on 4 August; at Norwick, Unst and on Papa Westray (Ork) on 11 August; at Camb, Yell (Shet) on 23 August; on Fair Isle on 6th and 13 September; at Norwick, Unst on 12–14th and 28–29 September; at Houbie, Fetlar (Shet) on 26–30th, and on North Ronaldsay (Ork) on 27 September. **Booted Warbler:** singles were on Fair Isle from 11 August to 1 September; at Earsairidh, Barra (OH) on 12 September; at Houbie, Fetlar (Shet) on 17th, and at Skaw, Unst (Shet) on 28 September. **Melodious Warbler:** singles were on Fair Isle on 24 and 31 August, on 2 September; on 6 September, two there on 8th, with one still to 10th, and on 14–17 September. **Icterine Warbler:** one was on Stronsay (Ork) on 7 August; two on Papa Westray (Ork) on 8 August; one at Hoswick, Mainland (Shet) on 13th, and two on Out Skerries (Shet) on 13 August. **Barred Warbler:** over 30 in August, all on the Northern Isles except for singles at Inverbervie (NES) and at Sleat, Skye (High) on 27th, and two at

Nasg, Barra (OH) on 28 August, with one still to 2 September. Mostly singles, but a peak count of three on Out Skerries (Shet) on 22nd. Over 60 in September, mostly on the Northern Isles except for singles Nasg, Barra on 2nd; at Balephuil, Tiree (Arg) on 2–8th; at Balemartin, Tiree on 8–12th; two on Barra on 15th, with one still to 23rd; one at Rattray Head (NES) on 16th, and one at John Muir CP (Loth) on 21 September. Mostly singles but peak counts of four on Fair Isle and on Sanday (Ork) on 13 September.**'Subalpine Warbler' sp.:** one not unequivocally assigned to species level was at 'The Manse', Barra (OH) on 26–28 July. **Firecrest:** on was at Langass Lodge, North Uist (OH) on 14 September.

Rose-coloured Starling: over 30 in July, mostly on the Northern & Western Isles, all singles except for two on North Ronaldsay (Ork) on 20th. Eleven were noted in August, all singles, mostly on the Northern Isles except for birds at Culduie, Applecross (High) on 5–6th; at Carnoustie (A&D) on 8th; at Stoer (High) on 14–16th; at Culkein (High) on 20th, and near Waternish Point, Skye (High) on 26 August. In September there were singles at Stromness, Mainland (Ork) from August to 6 September; at Skelbo, Loch Fleet (High) on 8th; at Balnakeil Marsh (High) from 19th into October; at Thorntonloch (Loth) on 21st, and at Aith, Mainland (Shet) on 19–29 September. **White's Thrush:** one was on Fair Isle on 29 September into October. **Bluethroat:** singles were at Noness, Mainland (Shet) on 10 September; at Grutness, Mainland (Shet) on 12 September; at Sumburgh Farm, Mainland (Shet) on 12th; on Fair Isle on 13th, 15th, 18th and 20–21st; at Funzie, Fetlar (Shet) on 26–27th; on Foula (Shet) on 28th; on Out Skerries (Shet) on 29th; at Wester Quarff, Mainland (Shet) on 29th into October, and at Norwick, Unst (Shet) on 29th into October. **Red-flanked Bluetail:** one was at Skaw, Whalsay (Shet) on 26 September, and one at South Ness, Foula (Shet) on 29 September. **Collared Flycatcher:** one was on Fair Isle on 9–10 September, and one on North Ronaldsay (Ork) on 11 September. **Red-breasted Flycatcher:** over 20 noted in September from 6th, all on the Northern Isles except for one near Snishival, South Uist (OH) on 28th, and all singles except for three at Sumburgh, Mainland (Shet) on 10th, with two still there on 12 September.

Yellow Wagtail: four were at Balcomie Beach (Fife) on 27 August, but otherwise under-reported. **Eastern Yellow Wagtail:** one was at Loch of Spiggie, Mainland (Shet) on 29 September into October, and a 'probable' at Haroldswick, Unst (Shet) on 29 September. **Citrine Wagtail:** singles were on the Southern Upland Way, near Cove (Bord) on 26 August - a potential first for Borders; one on Fair Isle on 31 August to 2 September; on St Kilda (OH) on 9 September; at Evie, Mainland (Ork) on 10th, and at Norwick, Unst (Shet) on 28 September into October. **Richard's Pipit:** one was on Fair Isle on 19 September, and one at Skaw, Unst (Shet) on 28 September. **Olive-backed Pipit:** two were near Valyie, Norwick, Unst (Shet) on 29 September. **Pechora Pipit:** one was on Fair Isle on 28th September. **American Buff-bellied Pipit:** one was on Hirta, St Kilda (OH) from 22 September into October.

Hawfinch: singles were near Durness (High) on 22 July; at Voehead, Bressay (Shet) on 26 July; on Fair Isle on 27 September, at Northfield Cottages, St Abbs (Bord) on 28th, and at Hillswick, Mainland (Shet) on 29 September. **Common Rosefinch:** one was reported at Ettrick Bay, Isle of Bute (Arg) on 13 July. Over 30 noted in August, mostly on the Northern Isles, with peaks of three on Out Skerries (Shet) on 20–22nd; four at Isbister, Mainland (Shet) on 23rd; three at Norwick, Unst (Shet) on 27th, and eight on Fair Isle on 31 August. At least 110 in September, mostly on the Northern and Western Isles, with peaks of eight on Fair Isle on 7th; nine at Norwick, Unst on 11th, and eight on North Ronaldsay (Ork) on 11th.

Lapland Bunting: first of the autumn was one on Papa Westray (Ork) on 6 September, with about 40 recorded to the end of the month, mostly on the Northern and Western Isles, including peaks of four on St Kilda (OH) on 17th; six on Fair Isle and four on North Ronaldsay (Ork) on 29 September. **Snow Bunting:** first of the autumn was one on Fair Isle on 18 September, with about 75 further birds reported by the end of the month, mostly on the Northern and Western Isles, with peaks of 12 on Fair Isle on 26th and 14 there on 30th, eight on Westray (Ork) on 28th, nine at Butt of Lewis, Lewis (OH) on 29th, and ten on North Ronaldsay (Ork) on 30th. **Little Bunting:** singles were at Norwick, Unst (Shet) on 11 September; at Sandness, Mainland (Shet) and on Fair Isle on 13 September; at Walls, Mainland (Shet) on 23rd; at Norwick, Unst on 26–29th; on Papa Westray (Ork) on 28th; at Sandwick, Mainland (Shet) on 29th and on Fair Isle on 29th; at Burrafirth, Unst, near Northdale, Unst and at Skaw, Unst on 30th, and at Hillwell, Mainland (Shet) on 30th. **Rustic Bunting:** singles were at Mucklegrind, Foula (Shet) on 20–21 September; on Out Skerries (Shet) on 29th; at Kibberhoull, Whalsay (Shet) on 29 September to 1st October and at Sandness, Mainland (Shet) on 30 September. **Rose-breasted Grosbeak:** a first-winter male was at Valyie, Norwick, Unst (Shet) on 25 September (2nd Shetland, 5th Scottish record) , and another at Balephuil, Tiree (Arg) on 30 September (1st for Argyll, 6th Scottish).

Scottish Birds

The journal of the **The Scottish Ornithologists' Club**

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Advice to contributors

There is a basic division in *Scottish Birds* between papers and short notes that are peer-reviewed followed by the Club and Birding sections which are not. These splits in content are highlighted by fonts used and paper colour.

The first part accepts manuscripts on the status, distribution and populations of birds in Scotland and, particularly, changes in these over time. Write-ups of census work find a natural home in this section, as do the culmination of research topics and updates to information in *The Birds of Scotland* (Forrester *et al.* 2007). Original work and observations are encouraged, but summary papers will be considered and key-note papers of a more general nature may occasionally be commissioned. Papers should be fully referenced as in any scientific work. House style should be followed and guidance is available on the SOC website. Articles of less than 700 words are generally considered as short notes, but are otherwise in a similar format.

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PhotoSPOT

Plate 261. Arctic Skua chasing Sandwich Tern, Aberlady Bay, Lothian, 27 August 2021. The gathering of over 300 terns along the outer tideline at Aberlady Bay proved to be a great attraction for a group of four Arctic Skuas in late August. Two hours quickly passed as I stood photographing up to five Roseate Terns in the Sandwich Tern flock, a juvenile Mediterranean Gull and, of course, the Arctic Skuas parasitising the terns. They were remarkably successful and as a result, bouts of chasing were interspersed with long periods of loafing on the sand.

Some of the skua-tern chases came so close that it was near-impossible to follow them and get a passable photo. I found the mid-distance chases still a challenge, but at least some of them were almost sharp. It was early afternoon, so a strong heat haze didn't help either.

This particular individual was a sub-adult, pale-phase bird, probably in its second calendar-year. The amazing patterning on the underwings and under tail (and upper tail coverts) resembled those of a juvenile, but the central tail feathers were fairly long and pointed. It had a well-defined dark cap, but it showed some mottling. The underparts also showed some faint barring. The other skuas present were intermediate and darker second calendar-year birds and a pale adult or third calendar-year bird.

Equipment used: Canon EOS 7D mkii, Canon 400 mm f5.6 lens, Aperture Priority, ISO 400, 1/1000 sec, f8.

Ian Andrews, Musselburgh, Lothian.
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